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CONGRESSIONAL RESEARCH SERVICE REVIEW

IS THE NATIONAL DEBT A BURDEN ON FUTURE GENERATIONS?

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V. 7 No. 5

GAIL E. MAKINEN

IS the NATIONAL DEBT a BURDEN o

The United States has never been without a national debt, although during the Presidency of Andrew Jackson it was reduced at one point to a mere $37,513. During the past six years, the national debt has nearly doubled, which is an unprecedented event in peacetime. Such a development is apt to focus public attention on whether debt-financed expenditures impose the same burden on the present generation of taxpayers as would tax financing. If it does not, what is the nature of the burden of a public debt, and how is that burden shifted forward to future generations?

Andrew Jackson

Among the many issues in public finance, those related to a national debt have evoked a long and increasingly fruitful debate among economists; a debate that, unfortunately, remains unsettled. Throughout much of the first half of the 20th century, the debate was dormant. It was raised anew when President Eishenhower noted in his State of the Union message on January 7, 1960 that a national debt is a mortgage on our children (implying that the burden of debt-financing expenditures had been shifted forward).

This notion contrasted sharply with the then generally accepted view among economists that so long as the debt was held internally, no burden could be shifted forward. Because current views on the weight of a national debt grew out of the controversy surrounding that statement of President Eisenhower, the discussion will digress to consider what the consensus was at that time.

The Old Consensus

The view that President Eisenhower challenged was one that sharply distinguished an internally held debt from one held by foreigners or an external debt. While the former did not shift a burden to future generations, it was believed, the latter did. To see the nature of the burden, consider an explicit example in which the government decides to purchase an additional $1 billion of goods and services through the sale of bonds, which in the first instance are purchased by Americans whilst in the other by foreigners.

When the bonds are purchased domestically, Americans give up $1 billion in resources to the government that they could have used for their own personal consumption. It is the surrender of resources that was held to be the burden of debt finance—a burden borne by the current generation who gave them up.

This concept of burden was given added plausibility when it was noted that the majority of the national debt had been incurred to finance World War II. It sounded absurd to argue that under these circumstances a burden had been shifted to the future. The resources to fight the war had to be given up by the generation present when it was fought and they alone had to bear the burden of debt financing. The fact that interest on this debt had to be paid by future generations and would call for higher taxes was considered, but held not to be a burden (the reason being that the taxpayer and bond holder would both be members of the same future generations).

Thus, while future generations would inherit a larger tax burden, they would also inherit the bonds and the interest income from them. It was as if money taken from one pocket to pay higher taxes was returned to the other in the form of interest income leaving the typical member of a future generation neither worse nor better off. Of course, there might be redistribution of income, but economic theory could say nothing objective about its desirability. (The additional taxes might also affect incentives to work and save, but the consensus was formed before supply-side economics was in vogue). If the debt was paid off, the same would be true. The generation that paid off the debt would get paid for it. In the words of the economists at the time, "we owed it to ourselves."

The same conclusion did not apply to an external debt. The basic analytic distinction arose in this manner: when governments sold debt abroad, they obtained goods and services without any need for the current generation of taxpayers to sacrifice. These taxpayers could still consume at the same rate as before. They gave up nothing. However, when it came to providing for debt service, the purchasing power of future generations would have to be reduced through taxation to provide the necessary

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n FUTURE GENERATIONS?

*THE PUBLIC DEBT OF THE UNITED STATES**
(in millions of dollars)

90	$ 75.5	*1930*	$ 16,185.3
20	90.0	*1940*	42,967.5
40	5.3	*1950*	256,087.4
65	2,677.9	*1960*	284,092.8
90	1,122.4	*1970*	370,093.7
00	1,263.4	*1980*	914,317.0
20	24,299.3	*1985*	1,827,470.0

As measured by the total gross public debt. For 1790, 1820, and 1840, the data are as of December 31; for 1865 through 1970 as of June 30; and for 1980 and 1985, September 30.

urce: Annual Report of the Secretary of the Treasury (1979) and Budget of the United States Government FY1987 (1986)

herewithal to be paid foreigners. It was this loss of in-me by future generations that measured the burden of e national debt and signified that it had been shifted rward.

DW TO SHIFT THE BURDEN OF AN INTERNAL EBT TO FUTURE GENERATIONS[1]

The vigor of the debate that ensued subsequent to esident Eisenhower's remark came as a surprise, for a od many individuals felt that this issue had been set-ed. As the debate concluded, it became apparent that a nvincing case could be made that an internally-held bt could impose a burden on future generations. Three parate mechanisms were suggested by which this could cur. While all three will be discussed, only the third has come popular and is now regarded as the major way by hich the burden of an internally-held debt can be shifted rward to future generations.

Voluntary Purchase—Involuntary Taxation[2]

As the old consensus saw it, the burden is borne by the rrent generation because it surrenders command over ods and services that it could have used for its own con-mption. Some critics suggest that this is a curious way define burden, for no one compels individuals to buy vernment bonds. It is a voluntary act. Once the bonds e purchased, however, higher taxes must be imposed future generations for debt service; an imposition ade without their consent. It is this imposition on future nerations that the critics claim is the burden when debt ance is used.

The Sale of Debt—Taxation by Inheritance[3]

This attack on the old consensus is really a more rigor-s statement of position A above. What is left unsaid by e consensus is whether the generation that buys the nds can ever recover its foregone consumption (the con-nsus implies that the bonds are given as a gift to the xt generation). In fact, it can by the simple expedient selling them to the next generation and using the pro-eds to restore its lost consumption.

Note, however, that while the lifetime consumption of e generation purchasing the bonds remains unchanged, is distributed differently over time—some part is de-rred until later in life. Supposedly, the interest earned the bonds induces the deferral. But, higher taxes have be paid for debt service—some portion of which must borne by the current generation. Hence, it (in effect)

"EACH GENERATION DOES ... BEAR SOME PART OF THE BURDEN ..."

defers consumption without much compensation and, as a consequence, bears some part of the burden. Since each generation can sell the bonds to the next generation, the burden of the debt, can, in the main, be continuously shifted forward. Each generation does, however, bear some part of the burden because of the tax obligation it inherits for debt service.

C. *Crowding Out*[4]

The advocates of crowding out start by examining how the government acquires the resources from the private sector and conclude that the consensus neglects the important role played by interest rates; a role that causes the burden to be shifted forward. To see the nature of their criticism, consider again the example above in which the government wishes to acquire an additional billion dollars in resources by selling bonds. The sale of the additional bonds will increase the demand for funds in financial markets, pushing up interest rates. Rising interest rates serve to discourage private sector borrowing to finance the purchase of capital goods.

Thus, government borrowing is said to decrease or "crowd out" some private sector capital formation. As a result, future generations receive a smaller capital stock than they would if the government expenditures had been financed by taxation. Since a smaller capital stock means a reduced rate of real income growth for future generations, that reduced rate measures the burden borne by them (and to some degree, by the current generation as well).[5]

The original version of crowding out, formulated in the early 1960s, was developed in the context of what is called a closed economy or one unaffected by the international movement of goods, services, and capital. When crowding out is examined in the open-economy context, the result is analagous to the old-consensus conclusion when a national debt is sold abroad. To see this, recall that when government debt is sold in financial markets, it causes interest rates to rise. The rise in rates attracts foreign capital which can either be used to purchase government debt or augment the stock of private-sector capital.

If government debt is purchased, the old-consensus view of the burden of a foreign debt prevails. If the private capital stock is augmented, it means that no crowding out occurs in the sense that the stock of private capital passed to the next generation remains what it would have been in the absence of debt financing. However, a portion of that stock will be foreign owned and the income from it will have to be sent abroad. The net result is that the growth of real income accruing to Americans will be reduced—as effectively as if the government debt had been sold internally.

From the crowding-out view, then, it makes no difference whether the debt is held internally or by foreigners, the net result is a burden shifted forward to future generations in the form of a reduced rate of growth of real income.

The Challenge of the 1970s[6]

As the old consensus came under attack in the 1960s, crowding out has come under attack since the 1970s. The challenge of crowding out starts by restating its essence and then questioning whether the public behaves as posited.

Since crowding out holds that whenever debt financing is used, a burden is shifted forward, it implies that the present generation of voters/taxpayers has purposefully decided to inflict a burden on future generations. It then asks, "if the present generation is intent on inflicting a burden on the future, does it need government debt to accomplish that purpose?" The answer is, from their perspective, "no." The present generation, they maintain, already has a private means available to inflict a burden—it can vary the amount of inheritance that it leaves to future generations by varying its own consumption/saving behavior.

If it desires to burden future generations, all that must be done is for the present generation to consume a larger fraction of its income. A smaller fraction saved will ensure that the capital stock grows less rapidly and that future generations are appropriately burdened.

From the perspective of the challenge, the inheritance received by future generations is not accidental. It is the result of a purposeful decision by the current generation on the allocation of its income. As they view it, the current generation plans to allocate its income over its own lifetime to consumption and saving in such a way as to maximize its own well-being or happiness. Thus, the fraction of its income that is saved and that adds to the capital stock to be inherited by the next generation is part of its overall plan for its own well-being or satisfaction.

Given such a plan, whenever debt finance is resorted to by government, it brings about offsetting behavior by the current generation. Because the current generation already has the means and has chosen how much to bequeath, the opportunity to leave less to the next generation should hardly prompt it to do so. Thus, in the presence of a decision to use debt finance, the present generation will increase its savings rate (decrease the proportion of its income devoted to consumption) by an amount sufficient to offset the new government debt. For that reason, crowding out will not occur.

While the decision to debt finance will increase demand in financial markets for funds, the decision by the private sector to save a larger portion of its income will supply more funds to financial markets; in fact, an equally offsetting sum. Interest rates will, therefore, not be forced up by debt finance and as a consequence, the amount of private sector capital will be the same as if the government had chosen to finance its expenditures by taxation.

(Note that a mechanism such as outlined by the challenge provides the underpinning for the Administration's position that there is no proven link between the Federal budget deficit and high interest rates in the United States).

As viewed by the challenge, then a decision to debt finance will not shift a burden forward to future generations. The burden is borne by the present generation when it decreases consumption (i.e., increases the proportion of income saved) in the face of a decision by government to use debt financing.

The Current Status of the Debate

The challenge to crowding out has not been universally embraced by economists. In fact, it has been subject to considerable criticism. That criticism has centered on three of its implicit assumptions.[7]

(1) In describing the supposed behavior of the current generation, the challenge implies that it is as concerned about its own well-being as with the well-being of its children. Since its children behave in the same fashion with respect to their children and they, in turn, with their children, etc., the behavior of the present generation can be reduced to the proposition that it is as concerned about its own well-being as it is with the well-being of its most distant heirs. It is as though the present generation has an infinite life and behaves accordingly. While the critics of this view would argue that evidence exists to show that parents are concerned about the welfare of their children, it is weak when it comes to the welfare of generations yet unborn to the end of time. For that reason, the present generation may not save a sum sufficient to counterbalance the amount of government expenditures financed by issuing debt.

(2) The second concern, and related to the first, is that the current generation has in it individuals who either have no children or who would like to leave their children a negative inheritance, but who have no private means to do so. Both groups will have a positive preference for financing government expenditures by selling debt, and their savings behavior will not be influenced by debt-financing expenditures.

(3) Many individuals in the present generation may desire to alter their consumption/saving behavior in response to debt financing by government, but are unable to do so. The Challenge does, afterall, require fairly rapid changes in consumption/saving behavior.

For these three reasons, a majority of economists are likely to argue that while the issues raised by the challenge are interesting and do serve to dilute the amount of

(Continued page 23)

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"Ike"—he thought a national debt was "a mortgage on our children."

BOB LYKE

HIGH SCHOOL DROPOUTS

Should Congress enact new legislation to help students complete high school? Should more programs be started for those who have dropped out? At issue is whether Federal leadership is needed to deal with the large numbers of American youth who leave school without a diploma. While good data on high school dropouts are not available, it appears that more students today are failing to graduate than 15 years ago. Demographic studies suggest that dropouts rates may increase further in the future. Current programs—Federal, state and local, and private—may not be sufficient to reverse this trend.

Few people doubt the importance of completing high school. Dropouts often have more difficulty getting a good job and earning good income. They often have trouble supporting a family. They may be more likely to receive welfare or to be convicted of a crime. Yet it is hard to distinguish the effects of dropping out from the effects of other problems these students have. For some, leaving school might not make much difference.

It is also hard to identify why students drop out. While dropouts generally have low grades, their academic problems may result from other troubles. Symptoms and causes get confused. Sound public policy may be difficult to delineate in such circumstances.

HOW MANY STUDENTS DROP OUT OF SCHOOL?

Information about the number of students who drop out of school comes from two sources, national estimates and local school district counts. Neither is satisfactory. *National estimates vary widely:*

> Data from a Department of Education survey called High School and Beyond show that 14 percent of students who were high school sophomores in the spring of 1980 left school before obtaining a diploma. However, since this survey omits students who dropped out before they were second semester sophomors, the estimate is too low.
>
> Using Current Population Survey (CPS) data, the U.S. Bureau of the Census estimates that 16 percent of 18-year olds and 19-years olds without a diploma are not enrolled in school. But CPS data do not include people who live in institutions or on military bases; thus this estimate is also too low.
>
> The Department of Education estimates that 26 percent of all students who enter the 5th grade do not graduate from high school in the eighth year afterwards. As some of the students not graduating would still be enrolled, though, 26 percent is too high an estimate of dropouts.[1]

What is clear is that the number of students leaving school without a diploma is not small. If 20 percent of all students drop out at some point, then each year the number of *new* dropouts would total more than 750,000. By any measure, this is cause for concern.

During the twentieth century the proportion of students graduating from high school has of course increased substantially. The table below shows that in 1900 there were about 6 new graduates per 100 persons 17-years of age, while in 1983 there were about 74 per 100. While reliable dropout rates for any one year cannot be calculated from these data (since students who do not graduate may remain in school), it is reasonable to assume that changes in the ratio of dropouts have varied inversely to changes in the ratio of graduates. Thus from 1900 until the late 1960s the dropout rate probably declined more or less steadily, while in the 1970s it probably increased. Although the dropout rate appears to have declined the last two or three years, it apparently is still higher than 15 years ago.

Some groups of students have higher dropout rates than others. Table 2 shows estimates of these rates from the Department of Education's High School and Beyond survey. (Although this survey excludes students who left school before the spring term of their sophomore year, it still is useful for reflecting relative differences among groups).

TABLE ONE
Number of High School Graduates Compared With Population 17-Years of Age[2]

School Year	Number per 100	School Year	Number per 100
1900	6.4	1968	76.5
1910	8.8	1970	76.7
1920	16.8	1974	74.4
1930	29.0	1976	73.7
1940	50.8	1978	73.0
1944	42.3	1980	71.4
1950	59.0	1981	71.8
1960	65.1	1982	72.9
1964	76.1	1983	73.5 (prelim.)
1966	74.7		

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Since it is anticipated that blacks and Hispanics will represent an increasingly larger proportion of the Nation's youth in the next century, it is possible that the overall dropout rate will grow as well. The projected increase of black and Hispanic students at least is likely to raise the dropout rate if they remain economically and socially disadvantaged.[4]

Many local school districts count dropouts. However, since districts use different definitions and procedures to determine who has left school, their counts must be used with great caution. *Only rarely can the dropout rate for one district be compared to that of another.* Particularly troublesome are the various ways districts classify chronic truants and students who withdraw without saying whether they are transferring to another school.

WHY DO STUDENTS DROP OUT OF SCHOOL?

It is not surprising that students who drop out have more difficulty when they are in school than those who graduate. As a group, students who leave without a diploma have lower standardized test scores and lower grades. They often have lower educational aspirations. They tend to be older than their classmates, suggesting that they had previously been retained in a grade. They are less likely to participate in school activities, particularly athletics. They are more likely to have been suspended or expelled. Many dropouts feel that they cannot get along with their teachers or do not belong in school.

Dropouts are less likely to come from homes that can provide strong support for education. They are not as likely to live with both natural parents. On average, their mothers have had less formal education and have lower educational expectations for their children. Their mothers are more likely to be employed. Their homes have fewer study aids.[5]

Some students leave school because they become pregnant or marry. Some become ill or dependent upon drugs and alcohol. Some are incarcerated. Family problems—poverty, divorce, illness, death—take their toll. Some students believe, rightly or wrongly, that graduating from high school will make no difference in getting a job or escaping poverty.

Most dropouts are affected by a combination of the factors mentioned above. Many also have problems that have developed over a number of years, even from before the time they started school. As a consequence, it is difficult to identify the principal reason for dropping out. Symptoms and causes get confused. The tangle of problems and causes also makes it difficult to develop successful dropout prevention and reentry programs.

WHAT ARE THE CONSEQUENCES OF DROPPING OUT?

Students who drop out of school have many disadvantages in life:

> *They are less likely to be labor force participants*, that is, either to have a job or to be looking for work. In 1985, for example, only 76 percent of men 24 to 64 years old who did not graduate from high school participated in the labor force, while 90 percent of such men who graduated but did not go on to college did so. Men who attended college had even higher participation rates.[6]

> *They are more likely to be unemployed.* In 1985, 11 percent of men 24 to 64 years old who did not graduate from high school were unemployed, while 7 percent of such men who graduated but did not go on to college were. Men who attended college had even lower unemployment rates.[7]

> *They are likely to earn less money.* In 1983, men 25 to 64 years with earnings who did not graduate from high school had average earnings of $14,568, about 75 percent of the average earnings of those who graduated but did not go to college ($19,459) and about 52 percent of the average earnings of graduates who attended college ($27,861).[8]

> *They are more likely to have difficulty supporting a family.* In the 1982–1983 period, 39 percent of all children in two-parent families were living in poverty if neither the father nor the mother had completed high school. If one or the other had graduated, but not both, 20 percent of the children were poor. If both had graduated, 7 percent were poor.[9]

However, it is difficult to distinguish the effects of dropping out of school from the effects of other problems dropouts have. The reasons people leave school may themselves be responsible for most of the adverse consequences attributed to dropping out; failure to graduate, by itself, may make little difference. Christopher Jencks' analysis of family background, academic ability, noncognitive traits, and schooling suggests that educational attainment prior to college may not be very important for future earnings:

> . . . the apparent advantages enjoyed by high school graduates derive to a significant extent from their prior characteristics. Unless high school attendance is followed by a college education, its economic value appears quite modest.[10]

On the other hand, since some studies have found that education attainment in general is a good predictor of future earnings, even when background factors are taken into consideration, it would be premature to dismiss the value of high school completion.[11]

Dropping out of high school may have adverse consequences for society as well as for an individual. For example, since adults who have dropped out are more likely to be poor, expenditures made for welfare programs might partly represent the social costs of leaving school without

TABLE TWO

Dropout Rates Of Students Who Were High School Sophomores in 1980[1]

All students	13.6%	Urban	18.9%
		Suburban	11.8
Males	14.7	Rural	12.8
Females	12.6		
		Northeast	11.3
Whites	12.2	North Central	12.0
Blacks	17.0	South	15.2
Hispanics	18.0	West	16.6
Native Americans/Alaskans	29.2		
Asian or Pacific Islanders	3.1		

a diploma. Similar economic costs might be attributed to lower labor productivity, reduced national income, and foregone tax revenues. For social costs, however, as for individual costs, it is difficult to separate the effects of dropping out of school from the effects of other problems dropouts have.

CURRENT PROGRAMS FOR DROPOUTS

Most secondary schools do not have separate programs designed just for dropouts or potential dropouts. While such students may be given remedial instruction and additional counseling (if they receive special attention at all), they generally take the same courses that other students do. How the current school reform movement will affect troubled or marginal students enrolled in regular programs is a matter of debate. Giving able administrators more responsibility, attracting better teachers, and testing students frequently may result in such students being identified and helped earlier. On the other hand, setting higher standards, assigning more homework, and requiring a curriculum of "core" subjects may increase their desire to leave.[12]

Special dropout programs have been established in a number of school districts. Some provide potential dropouts comprehensive counseling dealing with employment prospects, health problems, and family difficulties as well as with academic matters. Some provide alternative instruction with low student-teacher ratios and individualized work in reading and mathematics. Some also teach parenting skills and have day-care facilities. In large cities, these programs often are located in separate schools. A number of school districts are cooperating with private sector employers to offer employment training and work experience to students who have left or are likely to leave. Two such programs are the Boston Compact and the Summer Training and Education Program (STEP), currently being tested in six cities.

Several States have enacted legislation on dropouts. In New York, school districts with high dropout rates receive additional State aid. Hawaii allocates State funds for compensatory education on estimates of the number of dropouts and potential dropouts. In Colorado, students who have not attended school for six months may transfer to another school, either in their district or another. California and Washington provide public support for dropouts attending privately run education clinics.

Private sector organizations have organized some employment programs for dropouts and other disadvantaged youth. In several cities Jobs for Youth, a rapid job placement service, offers both job counseling and some education. An organization called 70001, with more than 50 local programs, emphasizes pre-employment training and provides opportunities to take courses leading toward a high school equivalency diploma.

The Federal program that currently provides most support for high school dropouts or potential dropouts is the Job Training Partnership Act (JPTA), P.L. 97–300. Training for disadvantaged youth and adults, the principal JTPA program (title II-A), provides a wide range of education, training, employment support, and work experience to individuals who are economically disadvantaged or facing employment barriers. Fiscal year 1986 appropriations for this program, less sequestered budget authority, are nearly $1.8 billion (though only a small part is spent on dropouts). The summer youth program (title II-B) supports on-the-job training, work experience, and supportive services to youth, including 14- and 15-year olds at local option ($636 million). The Job Corps, first authorized in 1964, is a residential education and training program for severely disadvantaged youth ($612 million).

Several Federal education programs provide assistance to dropouts or likely dropouts. The Adult Education Act (fiscal year 86 apropriation, less sequestered budget authority, $98 million) supports education programs for disadvantaged adults, some of whom are studying for high school equivalency certificates. Upward bound ($68 million) and Talent Search ($21 million), two of the Special Programs for Students from Disadvantaged Backgrounds (TRIO programs) authorized under the Higher Education Act, support programs to help low-income and potential first-generation college students complete high school.

In addition, States may use block grant funds they receive under chapter 2 of the Education Consolidation and Improvement Act (ECIA) for dropout prevention. Other Federal education programs to be noted are chapter 1 of ECIA (which provides funds for compensatory education), Head Start, the Education of the Handicapped Act, the Bilingual Education Act, and the Carl D. Perkins Vocational Education Act.

By assisting States and local school districts that have programs for students with special needs or interests, these Federal programs may reduce the likelihood that such students will find it difficult or unrewarding to complete their secondary education. However, little research has been done to assess these programs in this respect.

CURRENT LEGISLATION

In the 99th Congress there has been renewed congressional interest in high school dropouts. Most attention has been paid to three bills that would provide grants to local school districts for programs to help students remain in school or return to school to obtain a diploma: the Dropout Prevention and Reentry Act of 1985 (H.R. 3042/S. 1525); the Dropout Retention and Recovery Act (S. 1771); and the Dropout Prevention and Recovery Act (which is part of the Children's Survival Act, H.R. 3114/S. 1237). All three bills have provisions designed to generate better data on the number of students who drop out.

In addition, bills have been introduced to improve basic skills in secondary education, reduce adult illiteracy, create new employment and training programs for disadvantaged youth, and establish education programs in conjunction with JTPA summer jobs. Dropouts could be assisted by partnership agreements among schools, colleges, and private sector organizations under H.R. 3700, the Higher Education Amendments of 1985, that the House passed in December 1985.

The dropouts bills raise a number of policy issues. One is whether new initiatives should provide comprehensive or selective assistance.

Should legislation help students who might drop out as well as those who have?

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JOHN P. HARDT
JEAN FARNETH BOONE

U.S.-SOVIET TRADE: A TURNING POINT?

In the conduct of U.S.-Soviet commercial relations, policymakers have historically faced the dilemma between the benefits of East-West trade and its costs, both in security and diplomacy. There has seldom been consensus either in the United States or between the United States and its allies over how to define and control militarily significant technology and how to use trade for diplomatic leverage.

A number of current developments, though, on both the Soviet and American sides could provide the impetus for increased commercial exchanges. The new Soviet Five-Year Plan (1986–90) contains production objectives that seem to require imports of Western technology and equipment, particularly in sectors where U.S. firms could be the preferred suppliers—oil and gas equipment and agricultural equipment and technology. At the same time, these are American industries that have a serious need for new markets.

A return to summit negotiations and movement toward "normalization" of U.S.-Soviet relations could produce an atmosphere conducive to taking advantage of these trade opportunities. Significantly, U.S. Secretary of Commerce Malcolm Baldrige has stated on several occasions that the "expansion of peaceful trade" should be part of the effort to improve bilateral relations.

Still, the sharp decline in oil prices has created a hard currency shortage in Moscow, a factor that could constrain imports of Western goods or require new means of obtaining the hard currency to pay for them. Given the present potential for expanded trade, policy decisions in Washington and Moscow in the coming months could affect not only exports of grain and machinery from the United States but also U.S. imports from the U.S.S.R. and the extension of credit facilities. Expansion of trade is most likely to occur if the following conditions are met:

- If oil prices rise toward a stable, higher level;
- If the U.S.S.R. is willing to use its hard currency reserves and enter the credit market for short-term needs and for long-term financing;
- If Soviet trade institutions are reformed to make possible direct contact between foreign suppliers and Soviet end-users, and joint ventures in production, construction, and management; and
- If a second summit meeting is scheduled, resulting in improvement in the political environment that would lead to trade-facilitating policy and legislation in Washington and Moscow.

Current Status of Trade Relations

Since 1917, the beginning of the Soviet period, U.S.-Soviet commercial policy has followed a cyclical pattern of high peaks of interchange alternating with deep troughs of mutual economic isolation or independence. The variations in policy on each side have turned on the perceived need to balance the benefits of trade against the political costs—that is, the potential loss of security and diplomatic leverage.

Following a substantial upturn in commercial relations during the period of "detente" (1971–74), U.S.-Soviet economic relations over the last decade have shifted steadily from cooperation to confrontation. In particular, the Soviet invasion of Afghanistan in 1979 and the imposition of martial law in Poland in 1981 triggered economic reprisals from the United States, including the 1980 partial grain embargo, restrictive foreign policy controls on exports, and reductions in credit and bilateral exchange programs.

For 1985, U.S.-Soviet trade was minimal:

- U.S. exports to the U.S.S.R. totalled less than 10% of all non-socialist country exports to the U.S.S.R. ($2.9 billion compared to $32 billion). U.S. agricultural exports comprise approximately two-thirds of total U.S. trade with the U.S.S.R.;
- U.S. machinery exports to the Soviet Union are very low, currently about $0.1 billion—a level exceeded by U.S. trade with many LDCs (less developed countries);
- U.S. imports from the U.S.S.R. comprised about 2% of non-socialist nation imports from the U.S.S.R. ($0.5 billion of $29 billion). General Secretary Gorbachev likened this to our trade with the Ivory Coast [in speech to U.S.-U.S.S.R. Trade and Economic Council, Dec. 10, 1985, Moscow];
- Government credits are barred by U.S. legislation and private credit is minimal. The first U.S.-led credit syndication since Afghanistan was subscribed in November 1985 at favorable market terms;
- Major current examples of Soviet-American industrial cooperation are the early 1970s ammonia-urea-for-superphosphate deal with Occidental Petroleum and the vodka-for-Pepsi contract with Pepsico.

Bilateral trade is presently dominated by U.S. exports of grain to the Soviet Union, facilitated through the Long-Term Grain Agreement (LTA) signed in 1983. Under the 5-year LTA (1983–88), U.S.-Soviet grain trade has been stabilized and the dependability of the United States as a supplier assured.

During 1985, the prospects for expanding U.S.-Soviet commercial exchange appeared to improve as indicated by increased contacts and discussions between the two superpowers. On May 20 and 21, 1985, a meeting of the U.S.-U.S.S.R. Joint Commercial Commission took place, the first such high-level trade talks since 1978. (The United States suspended meetings of the Commission following the Soviet invasion of Afghanistan.) In the course of the meetings, the U.S.S.R. agreed to take steps to improve the access of U.S. companies to the Soviet market; the United States, for its part, made a commitment to end its 34-year old ban on the import of seven types of Soviet furskins. The U.S. Department of Commerce also agreed to renew trade promotion activities in the Soviet Union.

In June 1985, another step was taken to restore pre-Afghanistan commercial activities through renewal of the U.S.-Soviet Agricultural Cooperation Agreement. Authorizing a bilateral agricultural exchange program,

the agreement was originally signed in 1973, but activities were allowed to lapse following the invasion of Afghanistan. The new protocol calls for scientific and technical cooperation in 20 different agricultural fields through the exchange of information and teams of specialists. While the Soviets were primarily interested in the research and development exchanges from which they receive the greater benefits, the United States successfully sought provisions in the agreement which provide U.S. observation teams greater access to Soviet farms to study grain and crop conditions.

The Beginning of a Summit Process

The Reagan-Gorbachev November 1985 Summit meeting produced no major agreements on commerce, although agreements on airline safety and Pan Am-Aeroflot flights were consummated and U.S.-Soviet understanding on merchant marine and port entry was advanced. General Secretary Gorbachev, in his Geneva news conference, welcomed expanded bilateral trade, including large projects in U.S.-U.S.S.R. commerce. Overall, the positive assessment by both sides of the Geneva Summit and the agreement on holding subsequent summit meetings seemed to contribute to a more conducive environment for trade expansion.

This optimism was reflected in the December 1985 meeting of the nongovernmental U.S.-U.S.S.R. Trade and Economic Council in Moscow. Attended by 23 heads of companies and more than 300 executives from the American side, the meeting provided an opportunity for serious discussion of obstacles to, and opportunities for, expanded bilateral commercial relations. A high level of protocol was maintained throughout the Council's discussions, including an address by General Secretary Gorbachev to participants.

Overall, the Reagan-Gorbachev summit process initiated in 1985 set the stage for a potential trade policy debate in the Congress and the executive branch during 1986 on U.S.-Soviet commercial relations. One of the first issues of debate this year has been the renewal of foreign policy export controls on oilfield production and exploration equipment exports to the U.S.S.R. Imposed in the late 1970s to protest human rights violations, the controls would have expired this year under the new Export Administration Act unless specifically renewed and justified by the Administration.

Representatives of business argued that the controls should not be renewed, as they have been ineffective in denying the U.S.S.R. access to oil and gas equipment while being harmful to U.S. firms in loss of market share.

The Administration, in its report to Congress on January 24, 1986, indicated that it will make a compromise: while extending the controls, the Department of Commerce will review applications for the export of oil and gas technical data and equipment on a case-by-case basis, and will generally approve them. In the past, a "presumption of denial" was maintained for such applications. According to a recent statement by Commerce Secretary Baldrige, the first application by a U.S. firm since the change in policy took place has been approved.

AGENDA FOR CONGRESS IN 1986

Legislation dealing with export controls, import controls, and extensions of credit could play a significant role in determining the level of future bilateral trade.

S. 812 (Garn-Proxmire)

Financial Export Control Act. Amends the Export Administration Act of 1979 to authorize controls on the export of capital from the United States. Introduced Mar. 28, 1985; referred to Committee on Banking, Housing, and Urban Affairs. Hearings held Sept. 26, 1985 and Dec. 4, 1985.

S. 1860 (Danforth)

Trade Enhancement Act of 1985. Amends the Trade Act of 1974 to eliminate barriers and distortions to trade, to provide authority for a new round of trade negotiations, and to promote U.S. exports. Introduced Nov. 20, 1985; referred to Committee on Finance.

Comprehensive trade legislation is currently under discussion in the House Ways and Means Subcommittee on Trade, but no bill has yet been introduced.

S. 1809 (Dole)/H.R. 3019 (Gibbons)

Amends the tariff schedules of the United States to repeal the prohibition against the importation of certain furskins from the Soviet Union. S. 1809 introduced Oct. 30, 1985; referred to Committee on Finance. H.R. 3019 introduced July 17, 1985; referred to Committee on Ways and Means. Hearings held by House Ways and Means Feb. 6, 1986.

S. Res. 103 (Simon)

A resolution urging the President to negotiate a long-term agreement with the U.S.S.R. with guarantees of "contract sanctity" for the sale of U.S. agricultural products and technology. Introduced Mar. 20, 1985; referred to Committee on Finance.

S. 1868 (Heinz)

Amends the Tariff Act of 1930 to establish procedures for determining dumping by non-market economy countries. Introduced Nov. 20, 1985; referred to Committee on Finance.

Soviet Economic Plans and Constraints

In addition to the newly begun U.S.-U.S.S.R. summit process, the implementation of a new Soviet Five-Year Plan and a new Gorbachevian economic strategy could give further impetus to expanding bilateral commercial relations. In February 1986, at the 27th Soviet Communist Party Congress, General Secretary Gorbachev described the approach he intends to take to improve economic performance. Gorbachev's 5-year economic plan projects a growth rate of about 3.5%, in U.S. national accounting terms, which, if achieved, would dramatically reverse the downward trend in Soviet economic performance and provide more resources for investment, consumption, and defense.

To reach the plan's growth goals, the new Party Program—only the third of Soviet history—emphasizes scientific and technological progress, restructuring of the

ministerial system and enterprise organization, improvements in planning and management, and increased labor productivity. While Gorbachev stressed the need for "radical reform," some analysts speculate that the political and institutional obstacles to achieving these reform objectives may prove too great for Gorbachev over the long term.

For the short term, however, Gorbachev appears to be focusing on revitalizing the economy, relying particularly on the "human factor"—better trained and motivated managers, workers and farmers. In this respect, Gorbachev's discipline and anti-alcohol campaigns, widespread purges in the economic bureaucracy, and the institution of new incentives appear to be playing important roles.

Productivity is also to be increased through a comprehensive modernization of Soviet heavy industry. This strategy is indicated by the increased investment resources allocated to the machine-building sector in the Twelfth Five-Year Plan, as well as by planned increases in the rate of replacement of aging capital. To accomplish such modernization, the Soviet Union will both need to introduce world-level, state-of-the-art technologies into its industry and to improve the quality and competitiveness of Soviet goods for the world market.

Given these objectives, Gorbachev's economic strategy is likely to emphasize trade. The successful implementation of Gorbachev's economic strategy would be facilitated by participation of Western firms in modernizing Soviet industry and by cooperative commercial relations that promote increased Western imports of Soviet goods.

The Soviet leader has, in fact, indicated his interest in expanding commercial relations with the West through recent statements stressing Soviet commitment to interdependence, a more open economy, and more flexible forms of commercial interaction with the West [in speeches to the U.S.-U.S.S.R. Trade and Economic Council, December 12, 1985, in Moscow and again at the Party Congress]. The sectors receiving priority under the 5-Year Plan and offering potential opportunities for trade include:

Energy exploration, development and production (hydrocarbons, solar and nuclear energy);

Food and agribusiness;

Machine tools and equipment for all industries;

Chemical and petrochemical industries;

Consumer goods.

Nevertheless, while the Soviet Union and the United States are resuming discussion on trade facilitation and Gorbachev's new economic plans seem to call for increased imports of Western technology, the U.S.S.R. has been hard hit by a loss of hard currency, due to the dramatic fall in oil prices and the value of the dollar. In 1985, with approximately 65–70% of its hard currency exports in energy, the U.S.S.R. suffered a negative merchandise trade balance of about $3 billion.

Although the Soviets maintained a positive net current account of $2–4 billion in 1985 through gold sales, military sales, and services, many observers believe Soviet hard currency earnings will fall by $6–8 billion in 1986, leaving them with a current account deficit of $4–6 billion. While this balance-of-payments pressure could constrain the expansion of Western trade, the Soviets have a variety of options available for overcoming it in the short-term.

Gold sales might be increased by $3.5 million, according to some experts, without substantially reducing reserves; hard currency reserves in Western banks, now estimated at $10 billion, could be drawn upon to finance imports; aid and loans to developing countries might be reduced; or borrowing from the West could be increased. With respect to increased Western borrowing, legislation has been introduced by Senator Garn, the Financial Export Control Act (S. 812), which would place "national security controls" on the extension of credit by U.S. commercial banks to the Soviet Union in order to limit the U.S.S.R.'s ability to obtain hard currency.

The Administration has voiced opposition to this bill, in part because of the virtual impossibility of obtaining broad Western support for a credit embargo, without which it would likely have little impact.

Given their reduced hard currency earnings, the Soviets may also focus their imports on technology needed for industrial renovation while trying to replace some agricultural imports with increased domestic production. (Soviet agricultural imports have totalled $9–11 billion in recent years.) Such a shift could limit further the scope of U.S.-Soviet trade unless non-agricultural areas of exchange are expanded.

Furthermore, it is possible that the Soviet Union, if it does expand trade with the West, will show a preference for non-U.S. Western suppliers in light of past experience with U.S. "unreliability," i.e., enactment of embargoes and foreign policy controls.

The Prospects for Bilateral Trade: Three Scenarios

Still, the Geneva Summit rhetoric and recent actions of the principals on both sides raise the possibility of modest expansion in bilateral commercial relations. Such a scenario of moderate improvements would be based on expectations of renewal and expansion of the Long-Term Grain Agreement, effective assurance of U.S. contract sanctity, and more openness in the Soviet economy.

Should these developments occur, significant increases in certain U.S. exports, such as agricultural and energy technology, would be possible. Moreover, the reduction of import restrictions for Soviet goods entering the U.S. market and the expansion of U.S. Government and private credit facilities would improve the potential for expanded bilateral trade.

Although modest expansion is a likely scenario for the future, U.S.-Soviet trade could move toward either end of the spectrum—commercial restriction or full commercial normalization. In the first case, if currently proposed and potential limitations on exports, imports and credit are implemented, U.S.-Soviet trade will be reduced *below* current levels by 1990. Furthermore, if the Long-Term Grain Agreement is not renewed, even Soviet grain imports might fall to an insignificant level.

On the other hand, to approach fully normalized commercial relations with the U.S.S.R. would require the eventual granting by the United States of Most-Favored-Nation (MFN) tariff treatment and the opening of the

Mitterrand, 'Bulldozer' A Hit So Far

'Cohabiting' Brings Grudging Respect

By Michael Dobbs
Washington Post Foreign Service

PARIS—It sounds like "The Odd Couple" rewritten around French politics: an intellectual, somewhat introspective left-wing president is rejected by an ungrateful electorate and forced to "cohabit" with an energetic right-wing prime minister, nicknamed the "Bulldozer."

After nearly three weeks of living together, their joint apartment looks different. The furniture has been rearranged and each man has

FRANCOIS MITTERRAND
... remote political manoeuvrer

JACQUES CHIRAC
... closer circle with care

president has lost control over the assembly and, as a consequence, his ability to dictate policy to the government.

A study of important decisions

return to a "parliamentary" system of the kind France knew under the Fourth Republic, when governments were made and unmade by the National Assembly. Most of the

PAUL E. GALLIS

THE FRENCH LEGISLATIVE ELECTIONS OF MARCH 16; IMPLICATIONS FOR THE UNITED STATES

France held legislative elections on March 16, 1986, and the Socialist Party lost its majority in the National Assembly. As a result, for the first time since the Fifth Republic's establishment in 1958, a president has lacked a majority in the Assembly and has been constrained to select a prime minister from an opposing party. Socialist President Francois Mitterrand chose a senior conservative leader, Jacques Chirac, to form a government. The prospect of the two men governing together has raised questions over how power will be shared and over the direction that France will pursue on important domestic and international issues.

The election provided two allied conservative parties, Chirac's Rally for the Republic (RPR) and the Union for French Democracy (UDF), with a narrow two-seat majority in the National Assembly of 577 deputies. Nonetheless, the Socialist Party (PS) remained the largest party in the Assembly, a position that provides it with leverage in influencing decisions on major issues.

In order to gain the premiership and a certain latitude in addressing domestic issues, Chirac reportedly consented to President Mitterrand retaining the right to veto the nominations of candidates for the positions of Foreign Minister and Defense Minister. The pact between the two men thus underscored the traditional prerogative of the president to guide foreign and defense policies, even though the constitution gives the prime minister and his cabinet the authority to design and implement day-to-day policies. The line at which the president's authority ends and that of the prime minister begins remains unclear, however.

Government credit window. Such possible (but not currently likely) steps by Washington would elevate Moscow to the status presently occupied by the more favored Communist countries under the U.S. trade policy of "differentiation": Hungary, Romania, Yugoslavia, and the People's Republic of China. Going still further, full normalization could suggest a U.S.-U.S.S.R. trade relationship like that of the closest East-West commercial relations, such as those between Austria and Hungary, the two Germanies, Italy and Yugoslavia, and Japan-Hong Kong and the PRC.

Certainly, fully normalized commerce could be achieved only in a context of normalized political-military relations; preconditions to full normalization in commercial relations would have to involve:

A system of arms control agreements to stabilize bilateral relations;

An acceptable code of conduct for superpower involvement in regional disputes;

Acceptable conduct in the human rights area based on norms laid down in the Helsinki and United Nations agreements.

Without such a comprehensive improvement in U.S.-Soviet relations, any expansion of trade, no matter how modest, may be subject to disruption as a result of superpower conflict, as has been demonstrated in the past.

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"... A MILESTONE FOR THE FAR RIGHT NATIONAL FRONT PARTY ..."

The issue of division of power is an important one for the United States because France remains one of this nation's most influential allies. The appointment of a prime minister with a cabinet consisting of individuals from opposition parties could lead to an impasse in the governing process. Such a development could jeopardize effective French policy in general and interfere with the largely constructive relationship that has existed between France and the United States since Presidents Mitterrand and Reagan entered office in 1981. Mitterrand has strongly supported U.S. intermediate nuclear force (INF) deployments in Europe, taken steps to promote a resolution of the Persian Gulf conflict favorable to Western interests, and utilized French troops to check the advance of forces backed by Libyan leader Muammar Quadhafi in Chad.

Mitterrand's principal cirticism of U.S. foreign policy has been the Reagan administration's pursuit of the Strategic Defense Initiative (SDI). To differing degrees, his principal political opponents in France support the research programs outlined in SDI.

Potential domestic and foreign policy challenges for France are numerous and varied. Under these circumstances, U.S. policy makers could run a greater risk of presenting a new French government with an issue that exacerbates political debate in France and contributes to the development of an impasse in the formulation and execution of French policy.

The Possibility of Immobilized Government: Competition for Authority

The constitution of the Fifth Republic does not clearly demarcate the authority of the president and the prime minister, except in a few instances. Thus, the appointment of a prime minister able to choose a cabinet opposed to President Mitterrand but supported by the new majority in the Assembly could lead to an impasse in the governing process.

Among his most important functions, the president appoints, but may not dismiss, the prime minister. He may also dissolve the National Assembly and, in an emergency, take special powers that give him full control of the government. Mitterrand and Chirac agree that the president has undisputed authority to decide on the use of nuclear weapons in the event of an international crisis. The constitution charges the prime minister with selecting a cabinet and with formulating and implementing policy.

In practice, since the president has thus far always governed with a majority in the Assembly and has been the nation's most powerful figure, he has directed his prime minister in the choice of a cabinet and has guided overall policy. Mitterrand and Chirac have already sparred over such questions as who will represent France at international conferences and over the manner in which legislation passed under five years of Socialist rule will be rescinded or modified.

Political disputes within the right also provide fertile ground for conflict over policy and the exercise of power. UDF politicians Raymond Barre and Valery Giscard-d'Estaing join Chirac in being likely candidates for the presidency in 1988.

Should "cohabitation"—as the French term the situation in which a president must rule with an opposing majority in the Assembly—lead to an immobilized government, each may look not only to Mitterrand but to one another as targets of criticism. Barre refused close coopoeration with Chirac and Giscard in the electoral campaign and has said that he opposes Chirac's efforts to govern in tandem with Mitterrand.

Significance of the Elections for the United States

An impasse in decision-making, whether caused by differences between Mitterrand and opposition leaders or disputes among the opposition leaders, could jeopardize the generally constructive relationship that has existed between France and the United States in recent years. It also poses a serious dilemma for U.S. policy makers in pursuing the few critical policy differences with France, notably over SDI. In such cases, U.S. policy makers must weigh the importance of seeking a clear resolution of the issue against the likelihood that such a stance could prompt French opposition politicians to harden their differences with President Mitterrand and thereby increase the extent of impasse in French government decision-making.

Mitterrand has led opposition in the NATO states to SDI and has founded a European program, called "Eureka", intended to concentrate upon research into peaceful uses of emerging technologies. Some observers believe that Eureka serves an essentially political function by providing allies reluctant to criticize SDI openly with a forum where technologies not directly related to warfare may be championed. Chirac has guardedly endorsed SDI and has called for French participation.

U.S. policy towards Nicaragua could also provide ground for conflict should the Reagan administration succeed in strengthening support for the Contra movement. Mitterrand's criticism of U.S. policy towards Nicaragua has been consistent but reserved in tone. Chirac has generally backed the Reagan administration's efforts to weaken the Sandinista government. Should the United States increase its effort to de-stabilize the Nicaraguan government, Mitterrand could choose to sharpen his criticism—a development that could present the occasion for a clash with a government dominated by the center-right.

Strong divisions between the U.S. and France are not evident on other important current international issues. France remains outside the integrated command structure of NATO, but participates actively in the alliance's political structure. Under Mitterrand, bilateral military cooperation with the Federal Republic of Germany (FRG) has grown. Chirac has moved increasingly towards an "Atlanticist" position and has generally approved of Mitterrand's NATO policy.

The Rise and Fall of Parties

The March 16 elections marked a milestone for the far right National Front Party of Jean-Marie Le Pen. For the first time Le Pen's party succeeded in gaining seats in the Assembly. The party pursues domestic poli-

Paris, accenting the bridges over the Seine. *Library of Congress*

cies widely viewed as racist and cites the nation's immigrant population as a principal cause of the France's economic ills. Leaders of the RPR and UDF, despite their razor-thin majority, have said that they will not remain in power if they must rely on the National Front to pass their legislative program. By winning 35 seats, it matched exactly the number of seats gained by France's once powerful Communist Party, which scored its lowest percentage of the national vote in any election since the Second World War. The Communists' sharp decline could lead to the replacement of their long-time, and generally pro-Moscow, leader Georges Marchais.

The Fifth Republic and the Flexibility of its Institutions

The next two years could provide an important test of the flexibility of the Fifth Republic's constitutional machinery. Should Mitterrand and Chirac prove unable to share power satisfactorily, then the instability that marred the Fourth Republic could return. If France is divided at home, its policies abroad are likely to be less resolute and less effective.

Some observers have suggested that France may well find that a decided shift towards a system unequivocally vesting executive authority either in the president or in a prime minister and his cabinet may prove necessary if "cohabitation" proves unworkable. Other alternatives are also possible. If the governing process reaches an impasse, Mitterrand could dissolve the National Assembly and call new elections.

This could prove to be a risky course, for should the center-right enhance its position, its leadership could describe the results of the new elections as a repudiation of Mitterrand. Alternately, Mitterrand could resign and call for a new presidential election before 1988 in hopes of decisively reestablishing his authority. He is unlikely to take such a step unless he improves his position in the public opinion polls against Barre, the most formidable opposition candidate for the presidency at the moment.

The 1988 Presidential Elections

The elections for the National Assembly on March 16 were the opening round of the campaign for the presidential elections scheduled for 1988. Mitterrand may seek to rebuild the prestige of the Socialist Party by standing above domestic political disputes and attempting to provide themes for the direction of the nation. As president, he can not implement policy. Should Prime Minister Chirac prove to be weak at formulating and executing policy, Mitterrand could attempt to distance himself from any ineffective course of action.

And if Chirac, Barre, and Giscard allow their rivalry to disintegrate into a contentious battle for the presidency to the detriment of the functioning of the government, the Socialists could be well-positioned to present the strongest, most unblemished candidate. Both Michel Rocard, a moderate and younger Socialist leader, and Laurent Fabius, the prime minister in the overturned Socialist government, may seek the presidency in 1988 as the Socialist Party candidate if Mitterrand decides not to run.

Chirac has taken a calculated risk by accepting the premiership. If he succeeds in making "cohabitation" work smoothly and efficiently against considerable odds, he would undoubtedly emerge with greater stature than he now enjoys. In such a case, the popular Barre could see his current leadership in the public opinion polls fade.

If Chirac or Barre, or the two men together, appear obstructionist under "cohabitation" and bent primarily upon promoting their own positions, each could damage his standing for 1988. The French electorate is unlikely to favor a candidate who is perceived as having played a significant role in causing the immobilization of the government.

The uncharted waters that the constitution has provided could prove beneficial to Rocard or to other rising figures in the nation's political parties. "Cohabitation" has brought Barre, Giscard, and Chirac to center-stage with Mitterrand, thereby grouping the Fifth Republic's most prominent political leaders of the past fifteen years together in the effort to govern France in difficult times. In they fail, then the electorate in 1988 may seek individuals who did not hold direct responsibility in governing the nation and who utilized opportunities to present themselves as future leaders of France.

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COSMO DIMAGGIO

The Strategic Defense Initiative:

"What if free people could live secure in the knowledge that their security did not rest upon the threat of instant retaliation to deter a Soviet attack, that we could intercept and destroy strategic ballistic missiles before they reached our own soil or that of our allies?"

from President Reagan March 23, 1983, speech

The Strategic Defense Initiative (SDI) was established by President Reagan in 1984 to investigate the possibility of turning that vision into reality. According to the Administration, the SDI is a research program designed to explore, in a manner consistent with all U.S. treaty obligations, the technical feasibility of a number of defensive concepts and technologies to find ways to provide a better basis for deterring aggression, strengthening stability, and increasing the security of the United States and its allies.[2] The knowledge gained through the SDI will be used in future decisions by U.S. policymakers on whether to develop and deploy advanced defenses to these ends. The Reagan Administration anticipates that enough information will become available to allow for such a decision in the early part of the next decade.

Since the President's initial speech on the subject, there has been much confusion and disagreement regarding the goals of the SDI and the means for attempting to achieve them. A particular point of contention is whether to reach the President's goals, the SDI must determine that a 100 percent effective defense against ballistic missiles is possible. There are those who hold that a perfect defense is not a necessary condition for meeting those goals. They argue that nuclear weapons can be rendered "impotent and obsolete" (a phrase used by President Reagan in his 1983 address) by defenses that severely reduce their utility.[3]

Critics maintain that a less than perfect defense is not useful since any nuclear warhead penetration would prove disastrous. Still others argue that, even if ballistic missile defense (BMD) does prove to be feasible, SDI is precluded from achieving its lofty objectives because it does not address other methods for nuclear weapons delivery like cruise missiles, bombers, tactical missiles, and terrorist acts.

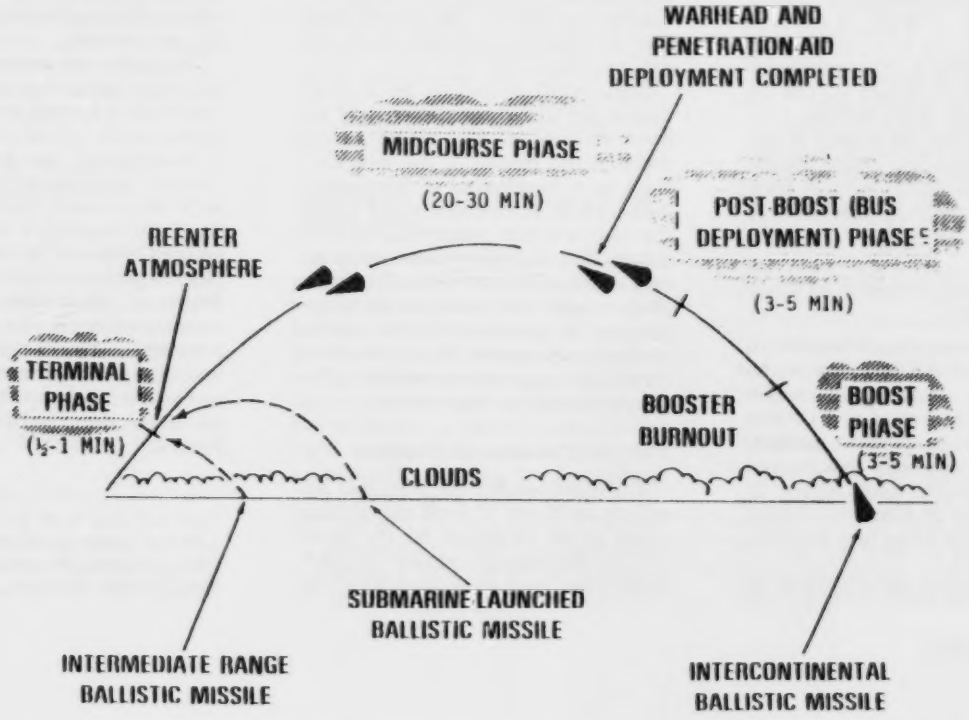
CRITERIA FOR SUCCESS

The Reagan administration has proposed two criteria for evaluating ballistic missile defense technologies and concepts that might be derived from the SDI. These criteria are that a defensive system must be: 1) survivable and 2) cost effective at the margin.[4] Of course, an additional, inherent criteria is that the system be effective in performing its intended function. The Administration contends that a reliable system that meets its two criteria would, if deployed, promote strategic stability between the nuclear superpowers.[5]

A brief discussion of each criterion follows.

Survivability

Strategic defenses must be able to survive a direct attack that might be launched just prior to or during a ballistic missile assault. Space-based systems are particularly vulnerable to such an attack. Hence, the SDI is concentrating its survivability research efforts on projected space-based elements of a hypothetical defensive architecture. Typical survival techniques include shielding, distancing the system from its potential attackers, maneuvering, proliferating, and shooting back. How-



U.S. CRITERIA and POLICY CONSIDERATIONS[1]

ever, these and other techniques might not be successful.

Survivability represents one of the major technical challenges of the SDI. In addressing this challenge, two critical questions must be resolved:

1) Can the more sensitive elements of a layered strategic defense[6] be made survivable?; and
2) Can they be made survivable at a cost that does not encourage proliferation of attack weapons to beat the system?

Cost

As stated by Special Advisor to the President, Paul H. Nitze, "new defensive systems must be cost effective at the margin—that is, they must be cheap enough to add additional defensive capability so that the other side has no incentive to add additional offensive capability to overcome the defense."[7] However, there are proponents who claim that a functionally effective ballistic missile defense should be deployed once it becomes affordable because any Soviet response to counter it (including proliferation) will take time, during which the defense can be modified to meet the new threat.

The only real similarity between these two criteria is that neither is presently satisfied. The former will be more difficult to satisfy, while the latter carries a higher risk of fostering an arms race. Critics argue that ballistic missile defense should not be pursued because the offense will always have a cost advantage at the margin.

Ambassador Nitze's ambitious criterion raises several questions. For example:

1) How will an adversary's costs be determined and what factors will comprise their costs?;
2) How, if at all, are non-quantifiables such as the relative value to society of either having or not having a defensive system to be factored in?;
3) To what degree can we rely on an adversary's acceptance of a "rational economic position?" and
4) Can we expect that, if initially satisfied, Ambassador Nitze's criterion will remain satisfied over time?

EFFECTIVENESS

Before a decision to proceed with full scale engineering development and deployment can be made, there must exist a high degree of confidence that the system, once in place, will be capable of destroying a desired percentage[8] of oncoming enemy ballistic missiles or their re-entry vehicles (RVs). Because of the unavoidable delay between a decision to deploy and deployment, system effectiveness must be judged versus an anticipated threat rather than the one faced at decision time. Technical system requirements include the ability to identify and track the launch of hostile missiles, discriminate missiles and RVs among decoys and chaff, target and fire defensive weapons, assess the results of this engagement, and communicate relevant data to successive defensive tiers along the targets' trajectories.

Several questions regarding effectiveness are yet to be resolved. For example:

1) What total level of effectiveness is desired?;
2) If attained, can this level be maintained in the face of an unconstrained offensive threat including countermeasures; and
3) How will system effectiveness be measured ahead of time to yield the confidence necessary for making a development and deployment decision?

STABILITY

Even if the SDI shows that a strategic defense against ballistic missiles is technically feasible, generally it is agreed that for some extended period of time (perhaps decades or longer) deterrence would necessarily rely on a mix of offensive and defensive weapons. If attempted, the transition from offense- to defense-dominated deterrent strategies must be managed such that throughout the transition neither side has, or is perceived to have, an incentive to strike the other. This is particularly difficult given that for strategic planning purposes generally one's own capabilities are underestimated while those of one's opponent are overestimated.

Questions regarding stability will need to be considered almost continuously. Arms control will have to play a vital role in creating and maintaining stability throughout this transition.

The SDI Organization (SDIO) and other strategic analysts are investigating how stability could be maintained under a variety of scenaros, assuming certain technical breakthroughs in both offensive and defensive technologies. Before policymakers can assess the impact of SDI-derived BMDs on present and future stability, they must understand and scrutinize the assumptions that drive SDI-related scenarios. For example, scenario outcomes can vary considerably depending upon assumptions of U.S. and Soviet force structures and their levels of effectiveness and survivability.

FUTURE DECISIONS

According to the Reagan administration, the SDI research program will provide the technical knowledge to support a decision in the early 1990s (or possibly sooner) on whether to develop and deploy advanced defenses. Little specific information is currently available concerning the types of options that might be presented to Congress at that time. A common misconception is that there will be only three options:

1) slow down the SDI effort and decide not to develop and deploy a BMD for technical, political, economic, and/or other reasons;
2) postpone a deployment decision to do more research; or,
3) move to development and deployment of a system that, once in place, will meet all U.S. strategic defensive needs for the foreseeable future.

The first and second options are both possible non-deployment outcomes. However, the third option—"a once and forever" deployment—is not likely to be a realis-

"... A WORLD OF COUNTERMEASURES AND COUNTER-COUNTERMEASURES."

tic one for the 1990s, if ever. Instead, it is more likely that there will be a variety of "pro-deployment" options for phasing in different strategic defenses over time. These alternatives might be based, in part, on varying assumptions concerning arms control.

Each option might be presented with estimates of costs, risks, and levels of effectiveness, both for deterring an aggressor's attack and for defending against an attack should deterrence fail. An essential element of each of these options probably would be a continued, strong research program for enhancing system effectiveness and for hedging against potential enemy efforts to counter it.

A decision to proceed with one of the "pro-deployment" options would likely lead to additional future options based on more advanced technologies. The SDIO refers to this evolution of defense technologies and strategies as the "path to 'thoroughly reliable' defenses."

NEAR-TERM FUNDING SITUATION

Most everyone agrees that research in strategic defense permitted by the Anti-ballistic Missile Treaty is warranted. Accordingly, even without the SDI program, the funding level in this area would not go to zero. Such a minimal funding scenario would essentially revert to the situation prior to President Reagan's speech in March of 1983. It can be argued that for the current stability to be maintained, this scenario requires that the United States have the ability to monitor Soviet strategic defense efforts to ensure against their negating the deterrent value of our offensive strategic forces through modernization and/or control.

The short-term funding requirements of this "minimum level" scenario appear to be less than those proposed by the SDIO in pursuit of strategic defense. And, it can be argued that if a useful BMD should prove technically unachievable, considerable expenditures will have been saved. However, it would be wrong to assume that because the risks in taking this approach are not readily apparent, that they are, in fact, smaller than those of the pro-SDI options. All options include the risk of nuclear weapons use for many years.

Those in favor of the SDI do not all have the same concept of what SDI could or should accomplish. Furthermore, proponents vary in their assessments as to how much total funding will eventually be required and at what rate spending should proceed to meet their own objectives for the program. In a world of countermeasures and counter-countermeasures, time might be the essential factor in achieving technical feasibility. The relationship between SDI goals and funding can be conceptualized as follows.

If the goal of the SDI is to proceed rapidly with research to achieve the capability to develop and deploy, unilaterally or otherwise, a system that is sufficiently ahead of offensive countermeasures such that it provides an "effective" defense against the offensive threat that is in place at the time of deployment, then SDI probably must be funded at a high rate, even prior to assessing the program's success. This scenario places the greatest burden on technological development, especially in the absence of arms agreements or other solutions limiting the offensive threat over time.

However, this scenario's appeal derives primarily from the possibility it holds for the United States independently to lead the superpowers to a more strategically stable position. This could require an ongoing, fast-paced, highly funded program for continually enhancing system effectiveness in the face of presumed rigorous Soviet efforts to counter U.S. defenses.

If, on the other hand, the strategic need for some SDI-derived BMD exists, but is not imminent (i.e., if strategic stability is not greatly threatened in the near term without such a system), and negotiations with the Soviets can be realized that result in offensive force reductions and verifiable agreements on development and deployment of defensive systems, then the possibility exists for slowing the rate of funding from an all-out technology-limited pace. However, in this scenario, the United States probably should not slow the rate of funding before a verifiable agreement with the Soviets is reached. If it did, the United States would run the risk of falling behind the Soviets both offensively and defensively, seriously limiting the ability of SDI ever to develop a system that would be effective against an everchanging strategic threat.

Both of these pro-SDI scenarios seem to dictate the need for large near-term funding (presumably at or near the Administration's request) to accomplish their objectives. Nonetheless, the issue of what constitutes appropriate funding for either case remains unresolved.

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[1]For additional information and analyses see CRS Report No. 86-8 SPR The Strategic Defense Initiative: Program Description and Major Issues, by Cosmo DiMaggio, Arthur F. Manfredi, Jr., and Steven A. Hildreth, and U.S. Office of Technology Assessment. Ballistic Missile Defense Technologies. Washington, OTA, 1985.

[2]U.S. President, 1981-(Reagan). The President's Strategic Defense Initiative. Washington, U.S. Govt. Print. Off., Jan. 1985. 10p.

[3]It is presumed that a rational adversary would not adhere to a nuclear strategy when only a small percentage of its forces would be able to penetrate a defense against them, especially since it would be impossible to know ahead of time which nuclear weapons would actually reach their targets.

[4]Nitze, Paul H. On the Road to a More Stable Peace. United States Department of State, Feb. 20, 1985.

[5]U.S. Dept. of State. The Strategic Defense Initiative. Special Report no. 129. Washington, June 1985. 5p.

[6]For example, space-based sensors and command, control and communications (C^3) hardware which must operate in a nuclear environment, and reflecting mirrors, which are susceptible to damage from relatively minor impacts.

[7]Nitze, Paul H. On the Road to a More Stable Peace. p.2.

[8]Generally regarded as 80 percent or better.

For further references turn to page 25

JONATHAN MEDALIA

"MIDGETMAN" SMALL ICBM:

ISSUES FACING CONGRESS in 1986

Congress will face decisions on the "Midgetman" small intercontinental ballistic missile (ICBM) program in connection with the FY1987 defense budget. This article discusses Midgetman's importance as an issue this year. It then focuses on the key question for Congress—whether to continue, modify, or terminate this program—by examining several points of contention.

Background

In the wake of the MX controversy, President Reagan appointed the Scowcroft Commission in January 1983 to review U.S. strategic policy. The commission favored prompt deployment of MX, development of a small ICBM, and arms control agreements promoting strategic stability. Many in Congress favored a mobile single-warhead ICBM; the Administration favored MX. Congressional moderates and the Administration agreed in May 1983 to support both missiles.[1]

Since then, congressional support and Air Force and industry effort have advanced the Midgetman program rapidly toward a crucial decision: whether or not it should enter full-scale development (FSD), the last stage of R&D.

The FSD decision, due in December 1986, involves a commitment, reversible only at high cost, to a specified system. It involves greatly increased yearly cost. It implies a commitment to deploy the selected system.

Yet the Administration might not proceed with Midgetman. In November 1985, it proposed to the Soviets a ban on mobile ICBMs, apparently reasoning that mobile missiles might be hard to verify, the Soviets lead by years in deployment of mobile missiles, and Congress might withdraw support given Midgetman's high cost.[2] While Midgetman could still be deployed in silos under this policy, Congress would be likely to object, given its concern for survivability and mobility. As a result, a ban on mobile ICBMs could well terminate Midgetman.

A decision not to proceed with FSD would be consequential. Should the Administration reach that decision at some point, it would violate the 1983 agreement between congressional moderates and the Administration, and could provoke a congressional response involving MX and SDI. Congressional support for Midgetman, however, is not assured. Congress might slow or stop it to save money. A decision by Congress or the Administration not to support Midgetman would call into question current U.S. strategic policy.

This policy, as articulated by the Scowcroft Commission, is based on the proposition that MX supports arms control, arms control facilitates Midgetman, and Midgetman promotes strategic stability. Removing Midgetman from this package would upset the rest of the package, and U.S. strategic policy with it.

"... AT MOST 33,000 POUNDS."

A decision to pursue Midgetman FSD will require Congress to decide if Midgetman is worth buying. To decide, Congress must answer four questions:

Is Midgetman survivable?
Is it stabilizing?
Does it promote stabilizing arms control agreements?
Is it cost-effective?

MIDGETMAN SYSTEM DESCRIPTION

The Midgetman system encompasses a missile and a basing mode. Congress mandated that the missile weigh at most 33,000 pounds and carry one warhead. In contrast, MX weighs 194,000 pounds and carries ten warheads. Midgetman will have high accuracy, so will threaten Soviet silo-based ICBMs. No decision has been reached on numbers to be deployed.

A basing mode will be selected as part of the FSD decision. The leading candidate is the hard mobile launcher, or HML (pronounced "hummel"), a vehicle intended to withstand a minimum blast force of 30 pounds per square inch (psi) and associated weapon effects. For comparison, a large truck can withstand 1–2 psi. A 500-kiloton (KT) warhead, typical of the Soviet inventory, can generate 30 psi at one mile.[3]

Two Midgetman/HML deployments are being considered. HMLs might be stationed on large Southwest military bases. They would disperse over 4,000 square miles in peacetime, 8,000 square miles on higher alert, and perhaps 28,000 square miles (including area off the bases) in crises. Alternatively, HMLs might be stationed within the two- to three-acre enclosures that contain Minuteman ICBM silos. On warning of attack, they would dash into the surrounding countryside.

In both deployments, the United States would try to prevent the Soviets from targeting individual HMLs by, for example, moving some at random, giving them a high dash speed, and making them maneuverable. Then, the Soviets would have to barrage the entire deployment area. If the area is large enough, the Soviets would not have enough warheads to barrage it. In that case, the system should deter attack or, if it is attacked, some Midgetmen would survive.

IS MIDGETMAN SURVIVABLE?

The most important attribute of mobile Midgetman, many congressional supporters believe, is its prospect of high survivability against Soviet attack. Yet Midgetman's survivability depends both on system characteristics (deployment area, HML hardness, etc.) and on the attacking force:

(1) If the Soviets do not have enough warheads to destroy the entire Midgetman force, some missiles will survive any attack.

(2) If the Soviets have enough warheads to destroy the entire Midgetman force but not most other critical strategic targets as well, they would conclude that they would put themselves at severe risk by attacking, so would be deterred.

(3) If the Soviets have enough warheads to be confident of destroying Midgetman and most other strategic targets, they would in theory not be deterred even with Midgetman.

Midgetman's ability to survive or deter thus hinges on the balance between the number of warheads the Soviets have and the number of warheads required to destroy Midgetman.

Midgetman's critics assert that the Soviets could improve this balance by increasing the first element and reducing the second:

(1) The Soviets could add warheads. According to Central Intelligence Agency testimony of June 1985, the Soviets have over 8,000 warheads deployed on ICBMs and submarine-launched ballistic missiles (SLBMs).[4] The CIA estimates that without arms control the Soviets could deploy about 15,000 to 18,000 of these warheads by the mid-1990s. This force (assuming average yield is 500 KT) is sufficient for attacking all U.S. land-based strategic offensive forces, including Midgetmen deployed on thousands of square miles.[5]

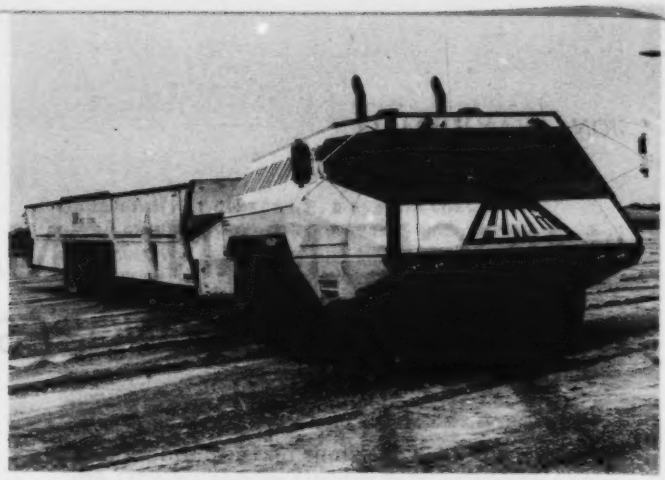
(2) The Soviets could deploy even more missiles for barraging Midgetman.[6]

(a) They could readily deploy spare missiles, space boosters (which are very similar to ICBMs), and new production missiles.

(b) Under the CIA's mid-1990s no-SALT scenario, the Soviets would retire almost all of their currently-deployed ICBMs. These missiles, if redeployed, would enable the Soviets to barrage approximately 14,700 square miles at 30 psi.[7]

(c) The Soviets have also retired over 1,000 ICBMs since 1974. Perhaps they could redeploy these missiles, which could barrage 14,000 to 18,000 square miles at 30 psi.[8]

(3) Futuristic technologies could let the Soviets attack individual HMLs instead of using a barrage, greatly reducing the number of warheads required to attack Midgetman. Since Midgetman will not be fully deployed before the mid-1990s, these threats are worth mentioning. The Soviets might develop maneuvering warheads that would scan the terrain for HMLs and home on them. The Soviets might attack HMLs with depressed-trajectory SLBMs, which, by arriving on target faster than SLBMs flying standard trajectories, would allow HMLs much less time to disperse.



This is a Hard Mobile Launcher test vehicle, built by Martin Marietta.

Midgetman's supporters see Midgetman as highly survivable against a threat of the current size, as the Soviets would not have enough warheads to barrage Midgetman and still attack other targets.

Supporters see a future threat in which the Soviets add thousands of missiles as unlikely because the United States would surely detect their deployment. In response, this nation could increase Midgetman's survivability by expanding the deployment area or increasing launcher hardness. These steps would increase the number of warheads needed for a barrage.

Some suggest that antiballistic missiles (ABMs) could increase Midgetman's deterrent value. If, for example, half the Midgetmen were concentrated on one-tenth the deployment area, and all the ABMs defended that small area, then in theory many defended Midgetmen would survive.

Supporters believe that the United States could avoid the foregoing responses if the Soviets accepted (and observed) arms control agreements that limited to current levels the number of missiles and warheads they could deploy, or if we thought the Soviets would be deterred from barraging Midgetman by the prospect of creating a worldwide nuclear winter.

Is Midgetman Stabilizing?

The Scowcroft Commission felt that "stability should be the primary objective both of the modernization of our strategic forces and of our arms control proposals."[9] Midgetman supporters believe that Midgetman will promote stability in two ways. It will reduce any Soviet incentive to preempt, as the Soviets would know that many Midgetmen would survive even a surprise attack. It would also reduce pressure on the United States to use ICBMs in crisis for fear of losing them, as this nation would know that Midgetman could ride out an attack.

Supporters hold that it is stabilizing for U.S. ICBMs to evolve toward carrying only one warhead. With such missiles, an attacker must use at least one warhead to destroy one of the defender's warheads, so would gain no strategic advantage by attacking. If each side has roughly equal numbers of silo-based ICBMs carrying MIRVs (multiple independently-targetable reentry vehicles), though, then one side could in theory destroy all the other side's ICBMs with a fraction of its own, providing an incentive to preempt.

Moreover, the HML for a single-warhead missile, being lighter than one for a MIRVed missile, should have better off-road capability. As a result, supporters hold, it could disperse over more of a deployment area, forcing the Soviets to use more warheads against it.

Supporters believe that survivable forces in all three triad elements promote stability because the differing strengths of each hedge against vulnerabilities in other elements. If the United States abandons Midgetman and the Soviets find a way to detect missile submarines, then, given massive Soviet air defenses, this nation would have no assuredly survivable forces. This extraordinarily unstable situation, they hold, must be avoided at all costs.

Midgetman's critics could argue that if Midgetman is vulnerable, then it would be a destabilizing, use-or-lose system. Vulnerable Midgetmen cannot hedge against unforeseen future vulnerability of missile submarines; rather, other U.S. nuclear forces and continued R&D on antisubmarine warfare will provide the needed hedge. If the United States wants Midgetman as a hedge, its critics could argue for keeping it in R&D. This approach could save billions. It could also permit Midgetman to be deployed only if needed, and to be responsive to whatever threat ultimately emerges.

Midgetman's critics argue that mobile ICBMs need not carry only one warhead apiece to be stabilizing. If a force carrying a given number of warheads compels the Soviets to barrage a given area, then it doesn't matter how many warheads each missile carries. For example, if a force of 167 three-warhead missiles or a force of 500 single-warhead missiles can each compel the Soviets to barrage 28,000 square miles at 30 psi, then both forces are equally stabilizing.

Does Midgetman Promote Stabilizing Arms Control Agreements?

Stabilizing arms control agreements are those that reduce the temptation to preempt in order to gain a military advantage or to avoid losing one's weapons. The Scowcroft Commission felt that agreements permitting the United States, and encouraging the Soviet Union, to move away from MIRVed ICBMs toward systems with fewer warheads would meet these goals.[10] Midgetman survives most assuredly if Soviet forces are limited to numbers insufficient to attack it and other targets. Will Midgetman promote these agreements?

Supporters say that Midgetman should make the Soviets more amenable to negotiating away their silo-based ICBMs because Midgetman, being survivable, reduces the offensive value of these Soviet missiles, while at the same time they are threatened by Midgetman, MX, and Trident II.

Midgetman's supporters argue that asking whether Midgetman promotes arms control misses the point. Midgetman's primary objective is not to promote arms control per se. The pieces of the Scowcroft plan were MX, Midgetman, arms control, and stability. They fit together as follows: MX promotes arms control by threatening Soviet ICBMs; arms control enables Midgetman to survive by limiting the threat; and Midgetman promotes stability. Arms control and Midgetman are thus integrated means to an end—stability—not ends in themselves.

Critics hold that Midgetman would not promote stabilizing arms control agreements because it would put the United States in an unacceptable bargaining position. If the Soviets add ICBMs to counter a mobile Midgetman force, the United States would have to increase deployment area, launcher hardness, numbers of missiles, etc., to prevent Midgetman from becoming vulnerable. The Soviets, however, would know that, by deploying more missiles, they could compel the United States to spend more money or incur political opposition to protect its investment in Midgetman. Accordingly, they could exact major concessions in exchange for agreeing to limit their forces.

Is Midgetman Cost-Effective?

Midgetman will assuredly be expensive. The Air Force estimates the cost in FY82 dollars for acquisition and 15 years of operation of 500 Midgetmen in HMLs to be $44 billion. Would the money be well spent?

The life cycle cost per warhead for various systems is as follows:[11]

System	*Life cycle cost*	*Life cycle cost per warhead*
100 B-1B with 16 weapons each	$33.5B FY81$	$21M
100 MX in Minuteman silos	$18.7B FY82$	$19M
1 Trident with 24 Trident II	$ 5.4B FY83$	$28M
500 Midgetmen on HMLs	$44 B FY82$	$88M

Midgetman opponents hold that obtaining a given effect for the least cost is important, especially in a time of fiscal austerity. They note that it should be possible to lower the cost of alternatives to Midgetman. For example, the Air Force indicates that the life cycle cost of 100 MX in Minuteman silos is $18.7 billion, vs. $16.7 billion FY82 dollars for 50.[12] Thus the United States could add 500 MX warheads (50 missiles) for $2 billion, or 500 single-warhead Midgetmen for $44 billion (15-year life cycle cost for each in FY82 dollars). If the United States intends to buy a mobile ICBM, Midgetman critics hold, it is worth investigating whether a single-warhead or MIRVed mobile ICBM is more cost-effective.

Deploying more Trident II SLBMs on Trident submarines than are currently planned provides another alternative to Midgetman. As noted, the 15-year life cycle cost of 500 single-warhead Midgetmen in HMLs is $44 billion F82 dollars. For comparison, a force of 750 Trident II warheads has a nominal 30-year life cycle cost of $21.2 billion FY83 dollars (750 multiplied by the $28.3 million life cycle cost per warhead). This force would permit 500 warheads to be at sea at any time. Those who are confident of the survivability of the Trident force would see it as more cost-effective than Midgetman: all 500 at-sea Trident II warheads would presumably survive, while not all Midgetmen would, yet the Trident force would cost tens of billions of dollars less.

Supporters of the Trident alternative believe Trident offers other advantages claimed for Midgetman. It is survivable. It is stabilizing, as it neither tempts the Soviets nor pressures the United States to strike first. Deploying Trident instead of Midgetman would encourage the Soviets to negotiate limits on their ICBMs by threatening those missiles and removing their targets. Trident's supporters believe the system meets U.S. needs, so that spending billions more for Midgetman than Trident is not justified.

(Continued page 22)

DONALD DULCHINOS

WHEELING IN THE ELECTRIC UTILITY INDUSTRY

The electric utility industry is currently catching its breath. A period of turmoil surrounding the completion of large construction programs is just winding down. At the same time, there is still great uncertainty concerning the future demand for electricity. The issue of wheeling, or the transmission of electricity between generator and customer by a third party (or between two utility systems by a third party,) has arisen as a response to uncertainty, as well as a necessary step toward a competitive electric utility industry in the future.

Pressures for Increased Wheeling

At present, the industry is overbuilt, and a number of utilities are experiencing financial difficulties. This has been compounded in a number of instances by questions regarding the prudence of their past investment by regualtory commission. Cost pressures resulting from this situation have led much of the industry to avoid construction of new power plants.

They have turned instead to a number of other strategies for meeting future demand, including encouragement of conservation and load management, and creation of stronger interties between systems and regions. Stronger interties permit greater bulk power (wholesale) transfers between the intertied systems, or between a producer and a third party, resulting in more efficient used of existing generation resources, as well as encouraging competition between different generating units.

The assurance that transmission or wheeling will be available when needed is perceived by various wholesale customers and independent generators, such as cogenerators (industrial companies that generate electricity along with their process heat) , to be in their best interests and those of the public at large. It would permit customers to shop around for the lowest cost electricity, while producers could seek those markets with the highest price. These activities augur a change from the current natural monopoly system of utility regulation to a more competitive market for electricity.

Advocates of deregulation argue that the electric utility system would operate more efficiently if it were more competitive. Many feel that wheeling should be mandatory (it is currently a voluntary arrangement) to assure these positive effects. Some generators and customers feel that the current voluntary system allows transmission facility owners to withhold transmission arbitrarily, thereby exercising monopoly power to obstruct competition.

Some of the major advocates of mandatory wheeling are small power producers and cogenerators, as well as those interested in utilizing Canadian electric energy. Canadian imports provide an opportunity to back out more expensive domestic generation. Cogenerators have found it difficult to market their production due to overcapacity in many areas of the country. As a consequence, these entrepreneurs favor mandatory wheeling of cogenerated electricity to areas where there is a market, and perhaps where the cogenerator may charge higher prices (due to higher "avoided costs" as mandated under the Public Utilities Regulatory Policies Act.)

As a result of these pressures and incentives, some wheeling is already taking place. An estimated 8 percent of electric sales in 1984 comprised electricity transported via wheeling by third parties. This represented a substantial increase over 1974. These transactions can take place under the terms of a negotiated agreement between specific parties, or under a wheeling tariff applicable to all. The negotiated agreement appears to be the most common arrangement, since all wheeling is currently conducted as a voluntary effort.

Regulatory Authority for Mandatory Wheeling

The voluntary approach is necessary since the Federal Power Act, antitrust law, and the Atomic Energy Act all provide discrete approaches to wheeling, but provide limited powers to mandate this activity. In this regard, it has generally been held that the Federal Energy Regulatory Commission (FERC) has no authority to mandate wheeling under antitrust laws, and very limited authority to order interconnection under the Federal Power Act. The courts can order wheeling under antitrust theories, but have generally deferred to FERC on the rates and conditions of the transaction.

Current FERC authority requires the Commission to await a request for a wheeling order, consider each request separately, and determine that each meets the statutory criteria. These include a showing that the order will conserve energy, that the affected utility will not suffer a loss, and that reliability and adequate service will not be impaired, as well as other requirements. Thus wheeling is not available on demand, but is subject to a lengthy process that may serve to decrease or eliminate the value of a given transaction.

"... AN IMPORTANT OPTION TO ENCOURAGE COMPETITION."

FERC recently initiated an inquiry to evaluate its current policies toward wholesale electric transactions and transmission service, and wheeling is considered as an important option to encourage competition. Considering the various antitrust decisions, however, FERC may not be able to mandate wheeling for competitive reasons alone. The notice also indicates the possibility of adopting a generic, rather than a case-by-case approach. It does not appear that the current statutes would permit anything other than a case-by-case approach, and this may be a major inhibitor of wheeling. In any case, the FERC inquiry may permit a more extensive consideration of wheeling than has occurred to date.

Library of Congress

The Nuclear Regulatory Commission (NRC), in fulfilling the antitrust requirements of the Atomic Energy Act, has inserted into construction permits a wheeling requirement. These appear to operate in a fashion similar to voluntary wheeling agreements and antitrust orders, in that they are subject to the FERC rate process. It would appear this approach overlaps both the antitrust and FERC authority, but applies only to those utilities owning nuclear generation. In any case, the antitrust and NRC approaches appear to defer to FERC on the price to be paid for wheeling.

The determination of whether to seek wheeling is essentially an economic decision, but current statutes place a heavy premium on the continued economic health of the wheeling utility. This makes it difficult for regulators to order wheeling, and raises the question of mandatory wheeling of electricity.

To Mandate or Not to Mandate

The question of mandatory wheeling appears to revolve around four areas. These are: system efficiency; the appropriate degree of competition in electric generation; reliability; and bypass. It can be argued that if wheeling prices are not properly structured inefficiency may result due to improper allocation of generating and transmission resources.

Insofar as competition is concerned, it is held by some that electricity is moving toward creation of a spot market. This will require access to the transmission network, so that purchases can be moved where needed, as needed. Offsetting this position are those who believe a spot market will be detrimental to reliability by removing the incentive to serve low profit markets. Reliability might be improved, though, by a more flexible transmission system resulting from mandatory wheeling.

Of possibly greater importance, however, is the question of bypassing the local utility. If mandatory wheeling were available, larger customers would be able to shop around for the lowest cost source of energy. This could require the local utility to raise its rates for the remaining residential and small commercial customers in order to recoup its fixed costs. If this were not permitted by the regulators the utility might suffer financially.

If increased rates were permitted, demand might decline, and with it revenues. In addition, bypass makes utility planning extremely difficult. Further, the customer leaving the system might forfeit his right to service, leaving him vulnerable in the event his new arrangement did not work out.

Thus, the question of wheeling can be viewed as a part of the discussion regarding the impact of competition on the remaining, regulated customers, as well as the degree of competition that is appropriate for the electric utility industry.

Pricing Wheeling Services

Aside from the above, a major issue is the pricing of transmission services. At present, rates for firm wheeling capacity (firm means reservation of a specific amount of capacity on a noninterruptible basis) are based on aggregated transmission related costs for the system. These are allocated to all firm customers based on their demand. Non-firm rates, however, are computed in a number of ways. In some instances a percentage of the value of the electricity, not to exceed one tenth of a cent per kwh, is added to cover wheeling charges.

In other cases a percentage of the savings accruing to the buyer from the electricity purchased is charged, and in still other instances pricing is used which reflects value of service. Generally, the rate charged represents the willingness or reluctance of the utility to wheel, as well as its monopoly power; it is also dependent on the availability of sufficient transmission capacity, the time of day, and the cost of transmission.

This kind of price setting tends not to take account of economic efficiency. It can be held that the goal of ratesetting should not be to encourage or discourage wheeling per se, but rather to encourage such wheeling as will result in reduced economic resource costs. That is, some wheeling transactions may result in lower costs for the buyer, but higher costs for the local utility that once served the buyer. In such an instance, wheeling is simply an income redistribution device, and while the buyer may be better off, society is not, and indeed may be worse off.

It is apparent that a major problem is the design of wheeling rates that avoid redistribution of income with-

out any compensating market-wide improvement in economic efficiency or equity. Misallocation of resources might be eliminated by using as a base for ratemaking, in the case of non-firm wheeling, the incremental variable costs imposed on the system by the wheeling transaction. Firm wheeling transactions could be priced at a rate that includes all costs imposed on the system by the transaction, including those that are fixed, and a fair profit.

Regulatory and Legislative Issues

There is little doubt that FERC has considerable discretion in the establishment of rates and other policies relating to wheeling under current law. Nevertheless, legal responsibilities for wheeling are shared between FERC, the courts and the NRC; the respective powers of each impose legal limits on the others.

FERC is now soliciting comments on its future course. Whether significant administrative initiatives will occur to encourage greater use of wheeling is questionable. What is clear, however, is that significant substantive and procedural constraints inhibit FERC's ability to deal with wheeling. Any substantial increase in wheeling activity would be difficult to regulate and would probably exceed FERC's present statutory authority, and give rise to important legislative issues for the Congress, i.e. whether to give FERC explicit authority to mandate wheeling.

Other pressures on Congress to mandate wheeling come from cogenerators seeking a wider market, and from municipal utilities and large industrial customers seeking to buy less expensive power through wheeling arrangements.

In addition, it is possible that existing PURPA legislation could be broadened to require utilities to buy power from non-utilities, in a way similar to how cogeneration and small power producers are currently guaranteed the purchase of their power. Wheeling would be very important to such a PURPA-based approach.

In any case, passage of wheeling legislation may depend on the degree of competition perceived to be desirable in the electric utility industry, and the changes in the regulatory system needed to assure adequate and reliable service under a more competitive system. See also Electric Utilities: Deregulation, Diversification, Acid Rain, Tall Stack Regulation, and Electric Demand Issues, by Donald Dulchinos and Larry B. Parker, IB85134.

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(Midgetman from page 19)

Midgetman's supporters note that the system's high survivability lowers its cost per surviving warhead and makes it cost-effective. Cost-effectiveness can be further increased, supporters note, by expanding the deployment area, which could significantly increase the number of Midgetmen surviving for little added cost. Others suggest that changing the basing and operating concepts for mobile Midgetman and pressing the Air Force to maintain competition among contractors can further reduce cost per surviving warhead and increase cost-effectiveness.[13]

Midgetman supporters stress that the decision on Midgetman's fate should not hinge on theoretical cost-effectiveness. Without Midgetman, a breakthrough in Soviet ability to find U.S. submarines would leave no assuredly survivable U.S. forces. Deterrence could then collapse. Why run that risk when we can avoid it by buying Midgetman?

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[1]"We will promptly undertake a major effort to bring the proposal of a small, single-warhead ICBM to fruition on a high priority basis.... I am seeking a clear show of support from Congress to signal U.S. resolve. A case in point is the clear necessity of approving funds promptly to procure Peacekeeper missiles." Letter from President Reagan to Senator Gore, May 11, 1983, reprinted in the Congressional Record, daily edition, Nov. 4, 1985: S 14735.

[2]See Don Oberdorfer and George Wilson, Offer to Ban Mobile Missiles Draws Fire, Washington Post, Nov. 22, 1985: 1, 16; Hon. Albert Gore, Jr., Administration Misgivings on Midgetman, Congressional Record, daily edition, Nov. 13, 1985: S 15363-65; and Hon. Albert Gore, Jr., Strategic Stability, Congressional Record, daily edition, Nov. 14, 1985: S 15419.

[3]One kiloton equals the explosive force of 1,000 tons of TNT.

[4]U.S. Central Intelligence Agency. Soviet Force Developments. Testimony before a joint session of the Subcommittee on Strategic and Theater Nuclear Forces of the Senate Armed Services Committee and the Defense Subcommittee of the Senate Committee on Appropriations. By Robert Gates and Lawrence Gershwin. June 26, 1985: Figure 5 (Page 15).

[5]If, as anticipated, the Soviets remain unable to detect at-sea missile submarines, they could not target them.

[6]The number of warheads added can be immaterial to barrage potential. A missile has about the same barrage potential whether it carries a few high-yield warheads or many lower-yield ones. Thus barrage potential can be increased by adding missiles, not by having existing missiles carry more lower-yield warheads. See U.S. Congress. Office of Technology Assessment. MX Missile Basing. (Washington: U.S. Govt. Print. Off., 1981): 258-260.

[7]This calculation sums the areas over which the individual warheads could generate 30 psi of blast pressure. For these warheads to barrage this total area, *the attack would require perfect accuracy, reliability, and timing.* Use of realistic assumptions would increase the number of warheads needed to barrage this area. Accuracy is imperfect, and warheads that miss their aimpoints would leave gaps in the intended barrage coverage. Other gaps would result from imperfect reliability, with some warheads not reaching their targets or not detonating. The calculations assume that warheads are detonated so that the rings of 30-psi blast pressure that they generate just touch, and that HMLs in the areas between 30-psi rings are destroyed by the simultaneous convergence of several blast waves. This convergence would increase the barrage area beyond that of the 30-psi rings, but requires the warheads to be detonated simultaneously and at about the same altitude. Such detonation is difficult to achieve, and failure to achieve it would create still more gaps in barrage coverage. "Fratricide," an effect in which warhead detonations interfere with following warheads, could result if detonations are not simultaneous, creating further uncertainty for the attacker.

[8]"Soviet leaders ... rarely reduce force levels, and winnow out stocks only when they cease to serve useful purposes." John Collins, U.S.-Soviet Military Balance: Concepts and Capabilities, 1960-1980. (McGraw-Hill Publications Co., 1980): 194. Seee footnote 7 regarding assumptions for calculating barrage area.

[9]U.S. President's Commission on Strategic Forces. Report of the President's Commission on Strategic Forces. (Washington: April 1983): 3.

[10]Report of the President's Commission on Strategic Forces: 3, 14-15, 23-24.

[11]Life cycle cost includes acquisition and operation. These figures exclude Department of Energy costs for the nuclear devices; they include 15 years of operation for B-1, MX, and Midgetman, and 30 years for Trident II. Sources: B-1B: Office of Legislative Liaison, U.S. Air Force, Jan. and Feb. 1986. The B-1B figure includes a rough estimate, derived by CRS from Air Force data, of the life-cycle cost of the weapons, assuming an average load of 16 weapons per aircraft. MX: Office of the Special Assistant for ICBM Modernization, U.S. Air Force, Feb. 1986. Trident II: Office of Legislative Affairs, U.S. Navy, Feb. 1986. Midgetman: U.S. General Accounting Office. Status of the Intercontinental Ballistic Missile Modernization Program. Report no. GAO/NSIAD-85-78: 7; and Office of the Special Assistant for ICBM Modernization, U.S. Air Force, Jan. 1986.

[12]Office of the Special Assistant for ICBM Modernization, U.S. Air Force, Feb. 1986.

[13]Hon. Albert Gore, Jr., Administration Misgivings on Midgetman, Congressional Record, daily edition, Nov. 13, 1985. S 15364.

FINDING INFORMATION ON THE PUBLIC DEBT

FINDING BOOKS

Library of Congress subject headings are used in library catalogs nationwide. This partial listing of subject headings may be used to identify books on the public debt issue.

Search Terms: Debts, public—United States
Deficit financing—United States
Budget deficits—United States

EXAMPLES OF BOOKS YOU MAY FIND:

Pascall, Glenn. The trillion dollar budget: how to stop the bankrupting of America. Seattle, University of Washington Press, c1985. 400 p.

Public debt and future generations. Edited by James M. Ferguson. Westport, Conn., Greenwood Press, 1982. 234 p.

FINDING JOURNAL ARTICLES

Citations to journal articles and other material on this issue can be found in a number of printed indexes available at most public libraries.

>*Reader's Guide to Periodical Literature* is an author/subject index to periodicals of general interest published in the U.S.

Search Term: Debts, Public

>*Public Affairs and Information Service Bulletin* (PAIS) is a subject index of books, pamphlets, government publications, reports of public and private agencies, and periodical articles relating to economic and social conditions, public administration, and internal relations.

Search Terms: Debts, public
Deficit financing

>*Business Periodicals Index* (BPI) is a subject index to articles appearing in English language business periodicals.

Search term: Debts, public

EXAMPLES OF JOURNAL ARTICLES YOU MAY FIND:

DeLeeuw, Frank, and Thomas M. Holloway. The measurement and significance of the cyclically adjusted Federal budget and debt. Journal of money, credit and banking, v. 17, May 1985: 232–242.

Haselthine, Robert W. Interest rates, inflation, and the national debt. USA today (magazine), v. 113, Jan. 1985: 19–22.

Scherschel, Patricia M., and Robert J. Morse. Soaring national debt—what it really means. U.S. news & world report, v. 99, Sept. 16, 1985: 33–35

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ional Debt, from page 4)

ding out that occurs, they are not likely to bring a dollar-for-dollar offset in private sector saving ev- ime the government decides that a portion of its ex- itures are to be financed through the sale of debt. , for most economists, President Eisenhower had a after all, and deficit financing involves some burden d forward to future generations.

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e principal papers arguing that the burden of an internal debt can be d forward and the counter-attack by the members of the old consen- ave been collected in Ferguson, James M., ed. Public Debt and Fu- Generations. Chapel Hill, University of North Carolina Press, 1964. is criticism of the consensus actually predates President hower's remark by a year or two and is contained in Buchanan, s M. Public Principles of Public Debt. Homewood, Ill., Richard , 1958.

is criticism of the consensus is found in Bowen, William G., Davis, rd G., and David H. Kopf. The Public Debt: A Burden on Future rations? American Economic Review, v. 50, Sept. 1960.

[4]This criticism was originally put forth in Modigliani, Franco. Long-Run Implications of Alternative Fiscal Policies and the Burden of the National Debt. Economic Journal, v. 71, Dec. 1961.

[5]While the argument that the burden is shifted forward is expressed in terms of a smaller stock of *private* capital, the relevant measure of burden should be in terms of the gross capital stock. Nothing prevents government debt-financing from being used to augment the stock of public capital, e.g., highways, dams, canals, bridges, education, etc. Thus, what is important is the combined stock of private and public capital passed to future generations.

[6]The formulator of the challenge view is Professor Robert Barro of the University of Chicago. His views can be found in Barro, Robert. Are Government Bonds Net Wealth? Journal of Political Economy, v. 82, December 1974, and in his text book, Macroeconomics. New York, John Wiley & Sons, 1984. ch. 15 (The Public Debt). Barro's ideas were first explicitly considered by one of the formulators of modern economics, the great British economist, David Ricardo (1772–1823).

[7]A highly readable exposition of these criticisms can be found in Tobin, James. Asset Accumulation and Economic Activity. Chicago, University of Chicago Press, 1980. ch. 3 (Government Deficits and Capital Accumulation).

FINDING CORE JOURNALS

The following journals focus on economic policy issues and occasionally contain articles on the public debt.

Business Week
Economist (weekly)
Forbes (bi-weekly)
Fortune (bi-weekly)
Journal of Money, Credit, and Banking (quarterly)
Public Finance Quarterly

FINDING LEGISLATIVE INFORMATION

Congressional activities on this issue may be monitored by searching the following publications.

Congressional Quarterly Weekly Report provides current information on congressional activities, the progress of major bills, and background information on major policy issues. Important recent articles are indexed on the back cover of each issue. A quarterly and an annual index are also issued. Congressional Quarterly also publishes an annual publication which cumulates material appearing in the weekly reports during that year entitled *CQ Almanac*.

National Journal provides information on important executive branch and congressional actions. The back cover of each issue contains a brief index to recent articles and annual indexes for subjects, personal names, government organizations, and private organizations are available.

EXAMPLES OF ARTICLES YOU MAY FIND:

Rauch, Jonathan. Politics of deficit reduction remains deadlocked despite Balanced Budget Act. National journal, v. 18, Jan. 4, 1986: 15–21.

Wehr, Elizabeth. Congress enacts far-reaching budget measure. Congressional Quarterly weekly report, v. 43, Dec. 14, 1985: 2604–2611.

FINDING NEWSPAPER ARTICLES

The following indexes may be used to locate newspaper articles on the topic.

New York Times Index
Wall Street Journal Index
Bell & Howell Newspaper Indexes (including indexes to the Chicago Tribune, Denver Post, Detroit News, Houston Post, Los Angeles Times, Washington Post)

EXAMPLES OF NEWSPAPER ARTICLES YOU MAY FIND:

Congress approves debt-ceiling rise, plan for major reductions in deficits. Wall Street journal, Dec. 12, 1985: 3, 24.

White House pressures Hill to raise debt ceiling. Washington Post, Oct. 8, 1985: A1, A5.

FINDING GOVERNMENT PUBLICATIONS

>Monthly Catalog of United States Government Publications

The *Monthly Catalog* lists documents issued by all branches of the Federal Government. The *Catalog* has monthly, semiannual, and annual indexes arranged by author, title, subject, keywords, and series/report title.

Search Terms: Debts, Public—Law and Legislation—United States
Debts, Public—United States

>Index to U.S. Government Periodicals

The *Index* provides access the U.S. Government periodicals which offer articles of lasting research and reference value. The *Index has author and subject access.*

Search Terms: Debt—Public

EXAMPLES OF GOVERNMENT PUBLICATIONS YOU MAY FIND:

Holloway, Thomas M., and Joseph C. Wakefield. Sources of change in the Federal Government deficit, 1970–86. Survey of current business, v. 65, May 1985: 101.

U.S. Congress. Joint Economic Committee. Public attitudes toward the deficit and tax reform. Hearing, 99th Congress, 1st session. Apr. 4, 1985. Washington, G.P.O., 1985. 91p. (Hearing, Senate, 99th Congress, 1st session, S. Hrg. 99–155)

U.S. Congress. Senate. Special Committee on Aging. The impact of Gramm-Rudman-Hollings on programs serving older Americans: fiscal year 1986; an information paper prepared by the staff of the Special Committee on Aging, United States Senate. Washington, G.P.O., 1986. 27 p. (Print, Senate, 99th Congress, 2nd session, committee print S. Prt. 99–132)
"Serial no. 99-H"

—Robert S. Kirk
Senior Economics Bibliographer

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FINDING INFORMATION ON THE STRATEGIC DEFENSE INITIATIVE

FINDING BOOKS

Library of Congress subject headings are used in library catalogs nationwide. This partial listing of subject headings may be used to identify books on the issue.

Anti-Satellite weapons
Astronautics, Military
Ballistic missile defense
Space warfare
Space weapons
Strategic Defense Initiative
X-ray lasers

EXAMPLES OF BOOKS YOU MAY FIND:

Broad, William. Star Warriors: a penetrating look into the lives of the young scientists behind our space age weaponry. New York, Simon and Schuster, 1985. 245p.

The Fallacy of Star Wars based on studies conducted by the Union of Concerned Scientists. New York, Vintage Books, 1984. 293 p.

Jastrow, Robert. How to make nuclear weapons obsolete. Boston, Little, Brown, 1985. 175p.

The President's Strategic Defense Initiative. Washington, G.P.O., 1985. 10p.

The Strategic Defense Initiative: defensive technologies study. Washington, U.S. Dept. of Defense, G.P.O., 1985. 27p.

FINDING JOURNAL ARTICLES

Citations to journal articles on SDI and other material can be found in a number of printed indexes available at most public libraries.

>Magazine Index

Antimissile missiles
Ballistic missiles
Laser-guided weapons
Space weapons
Strategic Defense Initiative (Defense Program)

>Public Affairs Information Service Bulletin
>Reader's Guide to Periodical Literature

Antisatellite weapons
Space, Outer—Military applications
Lasers—Military applications
Space warfare
Guided missile -Defenses

(High School from page 7)

Should it concentrate on academic deficiencies or also address personal and family problems?

Should it deal with employment as well as schooling? Answers to these questions will affect both how much assistance is available for dropout programs and also whether organizations other than schools can receive it.

A second issue is whether there should be new Federal dropout legislation. Some people think that as education is principally the responsibility of the States and local school districts, dropout programs ought to be designed and funded by them, at their initiative. Others argue that as the consequences of dropping out go beyond State or local boundaries, Federal leadership is needed.

There is also a financial issue. Should Congress expand existing programs or authorize a new one when there is widespread concern about the Federal deficit? To some people, the first priority should be to curb Federal spending. Others would argue that as dropout programs are investments with potentially large dividends, it would be false economy not to act now.

Bob Lyke is a specialist in education, Education and Public Welfare Division.

This article is based upon a CRS issue brief (no. 86003) of the same title.

[1]Samuel S. Peng. High School Dropouts: A National Concern. Business Advisory Commission. Education Commission of the States. [Denver] 1985. pp. 5–8. The Bureau of the Census estimate was made using Oct. 1981 data. The Department of Education estimate was based upon students who were in 5th grade in 1972.

[2]Source: Unpublished data from the Office of Research and Improvement, U.S. Department of Education. Note that the table does *not* show the proportion of 17-year olds who have graduated. The number of 17-year olds is used for comparison because for trend analysis it is a good proxy for the number of students of graduating age, which typically includes students ranging from 16 through 19 years of age.

[3]Peng, op. cit., p. 8.

[4]Harold Hodgkinson. All One System: Demographics of Education, Kindergarten through Graduate School. Institute for Educational Leadership. [Washington] 1985.

[5]The analysis in the first two paragraphs of this section are taken from Donald A. Rock et. al. Who Drops out of School? Findings from a National Study. Educational Testing Service. [Princeton] 1985.

[6]U.S. Department of Labor. Educational Level of U.S. Workforce Up Sharply over Decade. Press release 85-355.

[7]Ibid.

[8]U.S. Bureau of the Census. Money Income of Households, Families, and Persons in the United States: 1983 (CPS Series P-60, no. 146. Table 48).

[9]U.S. Congress. House. Committee on Ways and Means. Children in Poverty. May 22, 1985, p. 128. (99th Congress, 1st session. Committee print 99-8.)

[10]Christopher Jencks et. al. Who Gets Ahead? Basic Books [New York] 1979. p. 189.

[11]One such study is by Greg J. Duncan. Years of Poverty, Years of Plenty. Institute for Social Research. University of Michigan. 1984. pp. 110–111.

[12]For a discussion of some of these issues, see Edward L. McDill et al., Raising Standards and Retaining Students: The Impact of the Reform Recommendations on Potential Dropouts. Review of Educational Research, vol. 55 no. 4 (winter, 1985), pp. 415–433.

>*Scientific and Technical Aerospace Reports (STAR)*

Antimissile defense
Laser weapons
Military technology

EXAMPLES OF JOURNAL ARTICLES YOU MAY FIND:

Brown, Harold. Is SDI technically feasible? Foreign affairs, v. 64, no. 3, 1986: 435–454.

Kistiakowsky, Vera. Should university researchers accept SDI funding? Technology review, v. 89, Jan. 1986: 10–11, 17.

Lehrman, Lewis, and Gregory A. Fossedal. How to decide about strategic defense. National review, v. 38, Jan. 31, 1986: 32–37.

Tobias, Sheila, and Peter Goundinoff. Understanding Star Wars. Ms., v. 14, Feb. 1986: 54–55, 58, 83–84.

Worner, Manfred. A missile defense for NATO Europe. Strategic review, v. 14, winter 1986: 13–20.

FINDING CORE JOURNALS

The following journals regularly contain articles and/or editorial commentary on the Strategic Defense Initiative.

Aerospace America
Aerospace Daily
Astronautics & Aeronautics
Aviation Week & Space Technology
Bulletin of the Atomic Scientists
Defense Daily
Flight International
Foreign Affairs
National Defense
Space Flight
Strategic Review

FINDING NEWSPAPER ARTICLES

The following indexes may be used to locate newspaper articles on the Strategic Defense Initiative.

New York Times Index
Wall Street Journal Index
Bell & Howell Newspaper Indexes (including indexes to the Chicago Tribune, Denver Post, Detroit News, Houston Post, Los Angeles Times, Washington Post)

EXAMPLES OF NEWSPAPER ARTICLES YOU MAY FIND:

Diaz, Tom. Strategic Defense Initiative. Washington times, Feb. 10, 1986: 1A, 5A; Feb. 11: 1A, 6A; Feb 12: 1A, 8A; Feb 13: 1A, 16A; Feb. 14: 1A, 16A.

Knickerbocker, Brad. Weapons in Space. Christian Science monitor, Sept. 17, 1984: 1, 8–9; Sept. 18:1, 4, 6; Sept. 19: 3, 6; Sept. 20: 3–4; Sept. 21: 1, 32.

Gliksman, Alex. Behind Moscow's fear of 'Star Wars'. New York Times, Feb. 13, 1986: A31.

Wilson, George C. Mirror-reflected laser suggested to shield allies. Washington post, Mar. 3, 1985: A7.

FINDING LEGISLATIVE INFORMATION

Congressional activities on this issue may be monitored by searching the following publications:

Congressional Quarterly Weekly Report provides current information on congressional activities and background information on major policy issues. Important recent articles are indexed on the back cover of each issue. Consult this index under the headings "Budget" and "Defense". In the quarterly and annual indexes you may locate articles on the Strategic Defense Initiative by searching under the terms "Space policy", "National Aeronautics and Space Administration", "Satellites", "missiles", and "Strategic Defense Initiative." Congressional Quarterly also publishes an annual publication which cumulates material appearing in the weekly reports during a year. This publication is entitled *CQ Almanac*.

National Journal provides information on important executive branch and congressional actions. To locate articles dealing with the Strategic Defense Initiative, consult the cumulative indexes under "Defense" or more specific topical terms such as "Missiles" or the names of government agencies (e.g. "Defense Department", "National Aeronautics and Space Administration").

—B.F. Mangan
Science Bibliographer

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May 13, 14	FEDERAL LAW UPDATE. A series of hour-long classes discussing legal developments in such areas as Church-and-State, Capital Punishment, "Taking" Law, Right-to-Die, Food Safety, Education of Handicapped Children, Antitrust, Banking Law, Computer Law, The Supreme Court and Legislative History, Contempt and Congressional Access to Information, and Redistricting and Reapportionment. All courses taught by Legislative Attorneys and Senior Specialists from the American Law Division of CRS. Coordinator, Charles Doyle, 287-6006.
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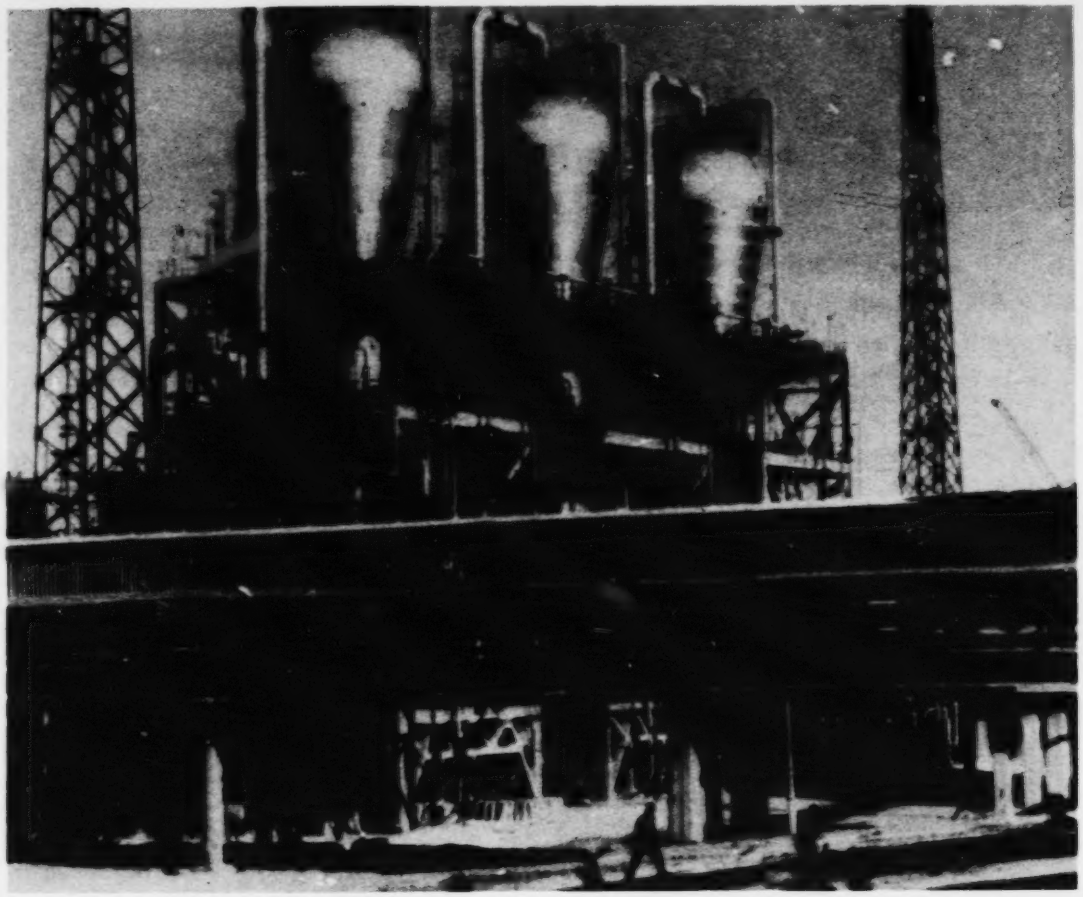
August 1	LEGISLATIVE INSTITUTE FOR MEMBER AND COMMITTEE STAFF. A full day program on the legislative process for congressional staffers. Covers committee systems, House and Senate floor procedure, and the budget. Generally a prerequisite for the Advanced Legislative Institute. Open to permanent staff ONLY. James Madison Building. Coordinator, Jill Ziegler.
August 21-23	CRS GRADUATE LEGISLATIVE INSTITUTE (CRS CONGRESS). In-depth studies of the legislative process for graduates of the CRS Advanced Legislative Institute. Participants play the role of a Member of the CRS Congress and conduct proposed legislation through hearings, committee markup, House/Senate floor sessions, and conference committee. Chestertown, Maryland. Coordinator, Ruth Allison.

Note: Reports and committee prints may be obtained by contacting CRS, at 287-5700. GAO reports may be obtained from the Accounting Office, Distribution Section, Room 1518, 441 G St. N.W., Washington, D.C. 20548, or phone 275-6241; CBO reports from the Office of Intergovernmental Relations, Congressional Budget Office, phone 226-2600; for OTA reports Publishing Office, Office of Technology Assessment, phone 224-8996. Please note that some of the documents referenced are not available for general public distribution.

The Soviet Economic Connection



A high density polyethylene (HDPE) plant at Budyennovsk, U.S.S.R. licensed by Union Carbide. A new one is at Kazan. Resins from these plants are used in the manufacture of water and gas pipe, also molded housewares, crates and—that international household necessity: pails. For amplification, see "U.S.-Soviet Trade: a Turning Point?" p.8.

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REAGAN BUDGET and the HOMELESS

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NUCLEAR ARMED SEA-LAUNCHED CRUISE MISSILES, IMPLICATIONS

NAVAJO-HOPI RELOCATION

PETROLEUM IN CHINA

V. 7 No. 6

.14.19:

THE REAGAN 1987 BUDGET and the HOMELESS

Homeless people have become increasingly visible over the past five years and apparently more numerous. In a nation that prides itself on high housing standards and humanitarian tradition, the increased numbers of persons without permanent places to live have not gone unnoticed. In recent years, private groups, local governments and some State governments have increased their efforts for the homeless. The Federal Government has been a source of funds for some of these activities, but there is no agency whose sole mission is to deal with the homeless. Federal aid is pieced together mainly by local providers in the absence of a national policy specifically focussed on the plight of homeless families and individuals.

The Congressional Research Service Review
Library of Congress
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Joseph E. Ross, *Director*,
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A.A. Hoehling—*Editor*, CRS Review

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NO. ISSN 0193–8029

MORTON J. SCHUSSHEIM

The closest thing to a Federal program directed exessly to the homeless is that of Emergency Food and helter. This program was enacted in 1983 and lodged in e Federal Emergency Management Agency (FEMA). he legislation emerged from the Congress without backg from the Reagan administration, which has not inuded funds for this effort in its annual budget submisons. The Administration's position is that caring for the meless is primarily the responsibility of private groups d local governments.

Nevertheless, the Secretary of Health and Human rvices, in late 1983, organized a Federal Task force on e Homeless, which now includes representatives of 15 partments and agencies. The Task Force serves as a nduit between Federal agencies and local groups helpg the homeless. The Task Force lacks the power to alloe the funds of its member agencies, but acts as a bor, tries to cut red tape, and generally seeks to marshal isting resources on behalf of homeless people.

These efforts would be curtailed if cutbacks proposed in e Administration's 1987 budget submission to the Conss are sustained. Most, in any case, are subject to ramm-Rudman-Hollings sequestration to achieve deficit duction.

At issue, then, is whether the Federal Government ould continue the Emergency Food and Shelter proam and the nature and scale of other Federal efforts to sist the homeless.

ho are the Homeless?

Homeless people are those who lack a permanent resince and spend the nights in shelters, streets, or other akeshift arrangements. A 1984 report by the Departent of Housing and Urban Development (HUD) counted nong the homeless those whose nighttime residence is:

> "(a) in public or private emergency shelters ... armories, schools, church basements, government buildings ... and where temporary vouchers are provided by private and public agencies, even hotels, apartments or boarding homes; or
>
> (b) in the streets, parks, subways, bus terminals, railroad stations, airports, under bridges or aqueducts, abandoned buildings without utilities, cars, trucks or other ... space ... not designed for shelter."[1]

Who are these people who rely on an emergency shelr or sleep on the street or in a car? HUD analysts have ouped them into three categories:[2]

1. Persons with chronic disabilities, such as alcoholics, other drug users, and the chronically mental ill;
2. Those with recent personal crises, such as battered women, runaway youngsters, and families that have lost their housing; and
3. Persons who have suffered bad economic setbacks: recently unemployed, persons who have held occasional jobs; sometimes referred to as the "new homeless."

The categories of homeless are crude but they seem to a more diversified group than 20 years ago. The earlier

HOW MANY PEOPLE ARE HOMELESS?

Estimates vary widely on the number of homeless persons. Some groups have put forward a figure of 2 to 3 million. HUD has come up with lower numbers—an outside range of 192,000 to 586,000, but "the most reliable range," according to the HUD analysts, is 250,000 to 350,000.[5] The HUD estimates are of the total number of persons in the country without a home on an average night in December 1983 or January 1984.

The homeless are found in all regions of the country, in most metropolitan areas, and some nonmetro communities as well. The West has a disproportionate number apparently because of its favorable climate and reputation as a job growth region. Los Angeles and New York City reportedly have the highest numbers of homeless among large metropolitan areas. The bulk of the homeless are believed to be located in large cities in part due to the availability of temporary shelters and social services in such places.

The categories of homeless are crude but they seem to be a more diversified group than 20 years ago. The earlier groups were predominantly white males, many of them alcoholics. Today, the homeless include large numbers of persons who were formerly in mental institutions, women as well as men, in some cases entire families. In some cities veterans of Vietnam or earlier conflicts are thought to make up one-third to one-half of the homeless[3].

One potentially significant dichotomy is between the homeless who use shelters and those who stay in the streets or abandoned buildings. The street people are more likely to be mentally ill, alcoholics or drug abusers than those who use shelters.[4]

The many different types of situations that have led to temporary or long-term homelessness suggest a variety of responses. Permanent housing is a key component of a rational response to the needs of certain homeless persons, but other forms of help—health care, mental health therapy, job training, food assistance, counseling in basic life skills—are part of many proposals.

Facilities and Services Available to the Homeless

Shelters and other facilities and services available to the homeless are generally provided by private groups, sometimes with financial help from a local government. In addition to emergency shelters, some localities provide families or individuals with certificates or vouchers to help pay the rent and thus avoid eviction and homelessness. Vouchers may also be given to destitute people to enable them to rent rooms in single-room occupancy buildings (SROs) or hotels.

Architects and others who have studied this problem see the need for a 3-tier system: emergency shelters with overnight sleeping spaces and decent daytime drop-in facilities; transitional accommodations such as group houses and halfway houses; and long-term housing.[6]

A national shelter survey, cited in HUD's Report on the Homeless, suggested that emergency shelters in the country could accommodate 111,000 persons on any one night in early 1984.[7] But such shelters are at risk in many communities because of neighborhood opposition, inner city redevelopent, or other factors.

Two shelters slated for closing in 1984 were in central parts of Salt Lake City and Miami, Florida. In March 1986 the Salt Lake City building was no longer being used as a shelter, but three temporary facilities, including trailers, were sheltering 450 persons a night. Another 800 to 1,000 persons were reported to be living on the streets.

The Miami facility continued to be in use with about 65 men sheltered on an average night. A planned purchase and removal of the Miami shelter by the city was in limbo for lack of funds.[8]

While shelter capacity expanded in the early 1980s, so did the number of homeless people. In some cities, a large mismatch between the availability of shelters and the number of homeless is reported. In Los Angeles, for example, shelter capacity is less than 2,000 while the number of homeless is estimated to range between 31,300 and 33,800 in one report and 35,000 to 50,000 in another.[9]

Private shelters are said to be cleaner and safer than public ones. Few public shelters provide job training, medical services, or mental health aid.[10] The extent to which emergency shelters, public or private, are tied into health and employment services in their communities or are able to guide their clients into transitional or open housing is not known.

Federal Assistance for the Homeless

It is probable that some portion of State and local efforts on behalf of the homeless has been funded by Federal revenue sharing, a program the Administration proposes to terminate after 1986. Almost certainly, also, much of the charitable aid provided by church and humanitarian groups is favorably affected by Federal tax treatment of charitable contributions, a type of tax expenditure. These aspects of the Federal role in dealing with the problem are significant but are not further quantified here.

The Federal Task Force on the Homeless has identified some 45 federally-funded programs or supports potentially available to the homeless. Only a few have been designed specifically for the homeless. Because they lack coping skills, or are disinclined, homeless persons may not participate in these programs, such as job training, or obtain the help to which they are entitled, such as Supplemental Security Income. For the most part, the homeless are dependent upon providers—nonprofit groups or local agencies—to piece together funds from various sources or to help the individual qualify for an income transfer for which he is eligible.

Some of the potential help comes through block grants to State or local governments, which may or may not be responsive to the problems of the homeless.

Many of these sources of Federal help are scheduled for cutbacks and some for termination in the 1987 budget submission of the Administration. Most are also subject to sequestration under the Gramm-Rudman-Hollings provisions, apart from the President's budget proposal.

Some key sources of funds for the homeless are listed below. They are grouped into four rough categories:

1. Facilities and furnishings for shelters and long-term housing.
2. Meals and food distribution.
3. Health and coping assistance.
4. Income support.

I. *Facilities and Furnishings*

1. An Emergency Food and Shelter Program is administered by the Federal Emergency Management Agency. A highly decentralized effort, funds are allocated to local areas by a National Board chaired by FEMA. Support programs in about 1,300 local jurisdictions, with about 40 percent of funds going for shelter and 60 percent for meals.

   Funding level: Actual 1985—$90 million; Estimated 1986—$70 million; Requested 1987—0.

2. Department of Defense (DOD) emergency shelter program. DOD has offered 600 surplus facilities to States or localities. Nine to ten shelters are actually operating. DOD may use funds to renovate the facilities but does not provide operating expenses.

   Funding level: 1985—$1.3 million; 1986—$0.6 million; Projected 1987—$0.7 million.

3. General Services Administration (GSA) has agreed to make unneeded vacant facilities available for shelters or shelter-related activities such as storage of food. In 1985, three facilities were being thus used. GSA also provides some surplus equipment and furniture.

4. HUD programs are mainly for permanent housing arrangements including rehabilitation of existing properties and Section 8 vouchers or certificates usable in private rental housing. New construction of public housing, privately-owned rentals for low-income families, and elderly and handicapped people has been sharply cut back since 1983. In most areas, waiting lists for these lower-income housing programs are very long. Homeless families or individuals face extended waiting periods.[11] The 1987 budget proposes to provide subsidies for only 50,000 additional families for the whole country, half for metropolitan areas and half for nonmetro areas formerly served by the Farmers Home Administration, whose main housing programs are to be terminated.

   Community Development Block Grants, administered by HUD, may be used by localities for acquisition and rehabilitation of buildings for shelters or more permanent housing for homeless families or individuals. Within an annual CDBG program level of $3.5 billion, some $74 million, it is estimated, was targeted to projects for the homeless in the period between March 1984 and October 1985.

   HUD also leases repossessed single family homes at a nominal rent for shelter use. In 1985 only 20 homes were in use.

   Funding level—all HUD activities:

	Budget Authority	*Outlays*
Actual 1985 —	$31.4 billion	$28.7 billion
Estimated 1986 —	10.7 billion	$15.2 billion
Requested 1987 —	5.5 billion	$13.9 billion

5. Farmers Home Administration has an inventory of single-family homes which it is prepared to lease for use as shelters at a nominal rent.

6. Veterans Administration has a community residential care program for veterans who cannot live independently and lack family resources. Care is provided largely in private homes, with 12,000 individuals assisted in 1985. Low-income veterans are also helped through a domiciliary care program. Approximately 12,000 persons in 16 centers were helped in 1985 at a cost of $92 million.

II. *Meals and Food Distribution*

1. The Department of Agriculture has several food assistance programs that may help the homeless including:

   a. Food Stamp Program that provided $10.8 billion for food coupons in 1985. How much went to homeless persons is not known.

   b. A Temporary Emergency Food Assistance Program that distributes food to needy individuals, some of whom may be homeless. Food valued at $978 million was distributed in 1985.

   c. The Food and Nutrition Service administers a Surplus Commodity Donations program under which commodities are distributed to charitable institutions and summer camps. Charitable institutions include soup kitchens, homes for the elderly, hospitals that offer general and long-term health are, meals-on-wheels programs and orphanages that do not participate in one of the child nutrition programs. In FY1984 foods valued at $199.8 million were distributed to charitable institutions.

   d. Some child nutrition programs, such as school lunch, child care food, summer food and supplemental food programs for women, infants and children, may provide support for homeless children and women, but there is no evidence that such support is significant. In FY1986, Federal expenditure for such programs is estimated at a total of $5.9 billion.

2. FEMA's Emergency Food and Shelter Program (listed above) funded about 51 million meals in 1985 at a cost of $36.8 million. No funds are requested for this program in the President's 1987 budget.

3. The Older Americans Act, administered by an office in HHS, supports nutrition and other services to older persons. In 1984, an estimated 214 million meals were provided.

III. *Health and Coping Assistance*

A variety of categorical aids and block grants are available through the Departments of Health and Human Services, Labor and Education, and an agency known as ACTION. The Federal Task Force on the Homeless and other groups are beginning to place increasing emphasis on social services, health care, job training, and psychological therapy in dealing with some root causes of homelessness. Some representative programs are:

1. Social Services Block Grants, an HHS program, enables States to provide a mix of services including short-term shelter, legal services, and foster care. The President requests $2.7 billion for this program in his 1987 budget, approximately the same level as in 1986 and 1985.

2. Community Services Block Grants, also administered by HHS, are made to States for the purpose of alleviating causes of poverty. The States, in turn, channel funds to local community action agencies or similar organizations which carry out antipoverty programs. The Administration has been trying for several years to phase out this program.

   Funding level: Actual 1985—$372.4 million; Estimated 1986—$370.3 million; Requested 1987—0. ($3.6 million for Federal administrative expenses to close out program)

3. The Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) has a block grant program funded at $490 million a year which supports Community Mental Health Centers. These centers provide outpatient services for the mentally ill and others. Homeless persons who are mentally ill are among those eligible, but how many are served is not known. Other programs of ADAMHA deal with drug and alcohol abuse, problems that afflict many of the homeless population.

4. Community Health Centers serve medically underserved populations through about 600 community health centers. Again, figures are not available but some homeless persons are probably included among beneficiaries. For 1987, the Administration's request is for expansion of the primary health care block grant to include not only community health centers but also family planning, migrant health, and black lung clinics.

   Funding level: Actual 1985—$3.8 billion; Estimated 1986—$3.5 billion; Requested 1987—$2.9 billion.

5. The Labor Department administers job training programs that provide job counseling, job training, and job placement. Some homeless, unemployed people may be helped by federally-funded State employment agencies, and an Emergency Veterans Job Training Program. the largest funded effort is the Job Training Partnership Act which seeks to prepare economically disadvantaged persons for permanent jobs. Elements are block grants to States, Summer Youth Program, Dislocated Worker assistance, the Job Corps, and help for migrants and seasonal workers, Native Americans, and veterans.

   Funding level: Actual 1985—$3.8 billion; Estimated 1986—3.5 billion; Requested 1987—2.9 billion.

(Continued on page 23)

TABLE A

Program	*Funding level* (outlays in billions)			
	1985	1986	Requested 1987	Current Law Estimate 1987
Medicaid[a]	$22.7	$24.7	$25.9	$26.1
Supplemental Security Income[a]	9.5	10.2	10.6	10.6
Social Security Disability Income[b]	19.4	20.4	21.1	21.1
Aid to Families with Dependent Children[c]	8.5	9.0	8.2	8.4
Food Stamps (included above)	11.8	11.8	11.5	12.0

[a]Includes Federal benefits and administration.

[b]In addition to benefit payments, includes funds for administration, payment to railroad retirement account, and interest on normalized tax transfers.

[c]In addition to benefit payments, includes funds for emergency assistance and administration.

Large as some of these programs appear in the aggregate, the amounts individuals or families receive can be relatively low. For example, the median benefit received by a 3-person AFDC family in January 1986 was $346 per month. And to repeat, some homeless families or individuals, for whatever reason, do not get any benefits.

Figure 1. **Northern portion of Yellowstone National Park. Photo courtesy U.S. National Park Service.**

Yellowstone National Park and its surrounding mountain ranges have been famous for more than a century for their geysers, spectacular scenery, and abundant wildlife. So incredible were the descriptions of early explorers that initially they were not believed on the East Coast. Questions surround this area again, not over its existence, but its future. New developments on Federal lands around the Park could affect both Park resources and its livelihood of the area's residents. Answers to these questions could be applied to similar situations in other countries.

First tourist

In the winter of 1807–08, the first white visitor to the Yellowstone area arrived. He was John Colter, a Virginia trapper and former member of the Lewis and Clark expedition. A second historical landmark was passed in 1834, with the arrival of the Yellowstone area's first tourist, Warren Angus Ferris, a clerk for the American Fur Company.

Yellowstone, the world's first National Park, was created in 1872 (16 U.S.C. 21 et seq.). Given the remoteness of the Park, and the primitive mapping at the time, it is not surprising that the first boundaries were all straight lines ignoring the geographical features that form more natural boundaries. Even subsequent boundary modifications have left the Park with much of its perimeter formed by such lines. Because such boundaries are artificial in terms of ecosystems, many of the Park's important resources, such as wildlife and water, cross into surrounding lands.

An *ecosystem* can be defined as "a unit made up of all the living and nonliving components of a particular area that interact and exchange materials with each other."[1] At Yellowstone, the broader area—the high mountainous region centered around the Park and surrounded by dry plains—has become known popularly as the "Greater Yellowstone Ecosystem." It may represent the largest intact ecosystem in the North temperate latitudes. From it flow rivers whose waters eventually reach the Pacific Ocean and the Gulfs of Mexico and California. Yellowstone's geysers, the result of exceptional geothermal activity, are unmatched anywhere else in the world.

The plants and animals in this area are distributed through one Memorial Parkway, two National parks, three National Wildlife Refuges, three States, seven National Forests, and some public land managed by the Bureau of Land Management. In addition, a small amount of

private land is scattered through the Ecosystem, mainly in the lower elevations.

Because the various species have different distributions, setting precise boundaries for the Ecosystem may not be possible: a person interested in grizzly bears would probably not draw the same boundaries as one primarily interested in bald eagles. Rather, as more and more species distributions become known, consensus may develop on those areas significant to a complex of many species. On the map, the inner boundaries show Yellowstone National Park and the outer boundaries depict where Federal activities are being debated concerning their role in the larger Yellowstone area.

Current Issues

The management of lands around the two National Parks has been the focus of recent concern. The debate has been most intense for National Forests, where the multiple use objectives include timber harvesting and energy development. Such activities may reduce available habitat for some species such as grizzly bears or bald eagles and, some argue, might damage some of the Park's unique hydrothermal features. Proponents of development activities assert that jobs, a way of life, and/or energy security are at stake, and that only limited areas are affected. Opponents counter that the financial benefit is small, particularly in light of possibly irreparable damage to the Parks or extinction of certain species.

There have been a number of specific activities that have stirred controversy in the Ecosystem, including proposed downhill ski development; wilderness designation; timber harvest; oil, gas, and geothermal development; grazing rights; and other activities. Three of the most contentious have been wildlife protection and management, timber harvests, and energy and mineral leasing.

Wildlife

Individual animals generally establish home ranges in accordance with their resource needs, such as food sources, resting areas, breeding sites, cover, or other requirements. Animals move about their ranges seasonally or even daily, depending on the species and on changes in the resources. In the Yellowstone area, these movements—often across several land ownerships—can bring them into conflict with humans. Management of many species, including elk, trumpeter swans, and bison, has been controversial, although attention has most often focused on grizzly bears and bald eagles which are particularly threatened by development.

The grizzly bear is listed as a threatened species in the lower 48 States under the Endangered Species Act. About 200 grizzlies remain in the Ecosystem. With an estimated 32 adult female bears in the population, the expected reproductive rate is from 8 to 22 bears annually. The bears' low reproductive rate has hampered recovery efforts.

Their distribution covers all of Yellowstone National Park, portions of Grand Teton National Park, and portions of six nearby National Forests. Because concerns for the grizzly have dominated the debate, boundaries defining the Greater Yellowstone Ecosystem are usually drawn to include all of the grizzlies' known distribution.

Interactions between humans and bears are sometimes fatal, usually for the bear. Poachers can get as much as $1,300 for a hide and carcass. Hunters occasionally kill bears attracted to their camps, and road accidents destroy other bears. Bears have been shot by sheep ranchers, and some have been deliberately or accidentally killed in programs to control problem bears. As few as eight deaths annually may exceed the birth rate of the population.

Grizzly feeding behavior has created its own challenge. Efforts of the last two decades to decrease Park bears' dependence on garbage led to a loss of a reliable food source. But some grizzlies may have died from the sudden loss of their habitual food source, according to some biologists. Limiting human access to parts of the Park may have reduced human-bear interactions, but the temporary closures have sparked protests outside the Park over feared loss of tourist business.

In the last few years, the bald eagle population has increased to 55 nesting pairs. The birds depend on the unusually rich fishing and nesting habitat in the surrounding valleys of the Ecosystem, but much of this prime region is threatened by housing development and the construction of levees around Jackson Hole and the Snake River.

Timber Harvest

Six National Forests in the area (Beaverhead, Bridger-Teton, Custer, Gallatin, Shoshone, and Targhee) sell a substantial amount of timber—about 130 million board feet annually, supporting about 900 direct jobs. These jobs represent slightly less than 10 percent of the 1970 employment in the counties around Yellowstone, but the timber base of these National Forests extends beyond the boundaries shown.

Since 1980, the six Forests have yielded over $2 million annually in Federal revenues, with prices ranging from $3 per thousand board feet (MBF) on the Shoshone to over $50/MBF on the Bridger-Teton, with an average of $17/MBF. However, the average cost to the Forest Service of preparing and administering these sales has varied from $30/MBF on the Bridger-Teton to $70/MBF on the Custer, with an average of $40/MBF. Many of these sales have costs exceeding revenues and are therefore "below cost."

Timber harvests affect wildlife habitat by altering food and cover. Associated road construction, while improving access for forest fire suppression and some types of recreation, may increase stream sedimentation and variations in water temperature, changes which can harm fish populations and wildlife habitat. In addition, increased human access, by itself, may disturb some sensitive species.

Energy and Mineral Leasing

Geothermal energy and oil and gas exploration have been controversial. Geothermal interest has been concentrated in the Island Park Known Geothermal Area west of Yellowstone National Park, in and around the Targhee National Forest. Island Park's geothermal potential may be related to the geysers and hot springs in Yellowstone, but the effect of development on the Park's geothermal display is unknown. Because of concern over the issue, the Bureau of Land Management has chosen not to issue any leases until Congress resolves the controversy through legislation.

Oil and gas exploration has been rather limited. The Overthust Belt, which has attracted much attention, lies to the west, and overlaps the southwesternmost portion of the map. The Bighorn Basin to the east is outside. There is active drilling, including some production, in two areas on the periphery of the Ecosystem: in the Targhee National Forest in Idaho, southwest of Jackson, Wyoming, and around the town of Dubois, Wyoming, between the Shoshone National Forest and the Wind River Indian Reservation. While the level of drilling has been low, substantial acreage has been leased within the area shown, and might be developed in the future.

> "[S]pecies extinction ... is the folly our descendants are least likely to forgive."[2]
>
> "Human beings should be able to live on and enjoy this land, too. Why do we have to give it all to fish, wildlife, and related species?"[3]

Conclusion

In the area around the world's first National Park, the United States faces a set of choices now seen clearly in other countries as well. Special areas and the biological diversity they represent may be set aside and enjoy elaborate legal protection. Yet, through mechanisms as immediate as settlement by slash-and-burn agriculturalists and corporate investments, or as remote as the transport of distant air pollutants and major demographic changes, these areas are affected by forces well beyond their borders. The United States, and Yellowstone National Park in particular, could become a model for either the continued entanglement or the resolution of some of these transboundary conflicts.

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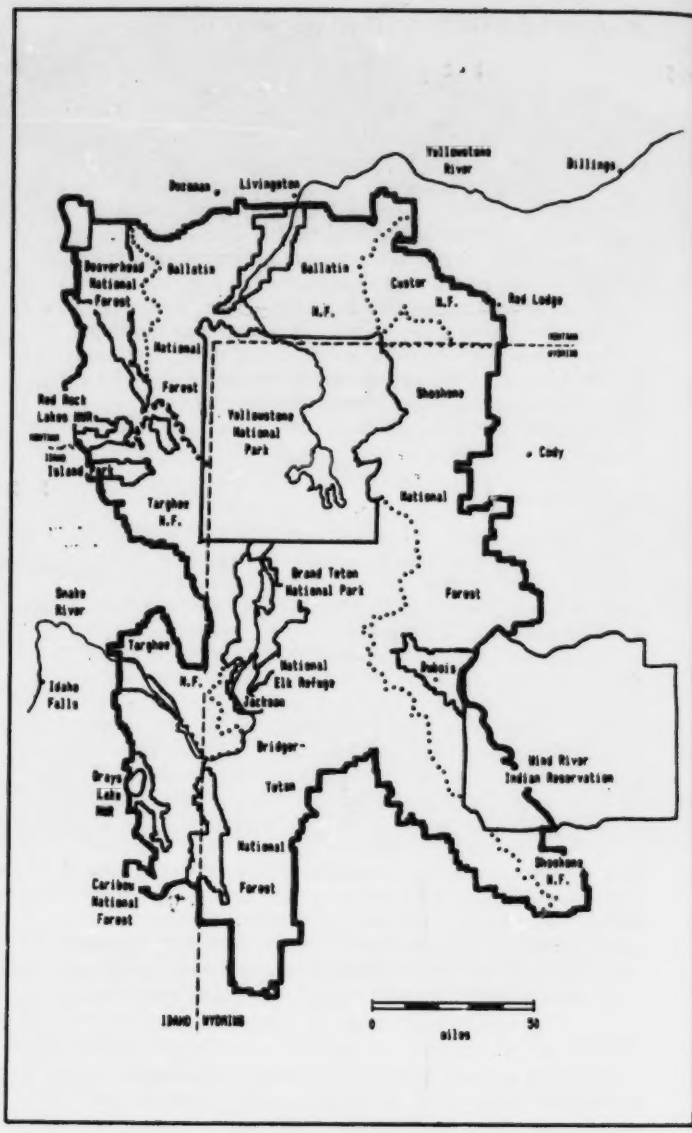


Map of Yellowstone National Park and its environs. Prepared by the Congressional Research Service, November, 1985.

[1]*Dictionary of Biology*. (Elizabeth Tootill, Ed.). Intercontinental Book Productions, Ltd., with Seymour Press, Ltd. Berkshire, England. 282 p.

[2]E.O. Wilson, Baird Professor of Science, Harvard University, p. 289 of U.S. Senate. Subcommittee on Environmental Pollution of the Committee on Environment and Public Works. Endangered Species Act Oversight. Washington. U.S. Government Printing Office. Dec. 8 and 10, 1981. Serial No. 97–H34.

[3]Remarks submitted by Darla Boyer and Greg Semple of Bozeman, Montana, for joint hearing of Oct. 24, 1985, on the Greater Yellowstone Ecosystem, before the House Interior Committee's Subcommittee on Public Lands and the Subcommittee on National Parks.

WAYNE RIDDLE

Student Loans

The concept of providing loans to postsecondary students that would be repaid on the basis of borrower income after graduation has been discussed at least since economist Milton Friedman endorsed such a proposal in 1945. In its FY1987 budget request to Congress, and in proposed legislation to reauthorize the Higher Education Act, the Reagan administration has recommended that the National Direct Student Loan (NDSL) Program (title IV, part E of the Higher Education Act, as amended) be modified to include annual repayments based on borrower income, a higher borrower interest rate, higher loan limits, plus accrual of borrower interest during in-school and other periods when loans are not in repayment status. This analysis offers a brief introduction to issues related to the Administration proposal.

INCOME-CONTINGENT REPAYMENT OF STUDENT LOANS—THE GENERAL CONCEPT[2]

Income-contingent loan proposals have generally shared certain common characteristics, while differing fundamentally in some other respects. The basic *common* characteristics of income-contingent loan proposals have included the following:

- annual repayments, perhaps also repayment rates, that vary in relation to income after graduation;
- repayment period that is longer than the 10 years that currently applies to the major U.S. Department of Education student loan programs (National Direct Student Loans and Guaranteed Student Loans);
- relatively high annual and cumulative borrowing limits; and
- provision for forgiveness of any remaining unpaid principal at the end of a fixed (albeit extended) repayment period (for those with consistently low income).

Beyond these similarities, income-contingent loan proposals have *varied* widely. The most basic source of variation is the relationship of repayments to borrower *income*. The proportion of income to be devoted to loan repayments might be the same at all income levels, be "progressive" (higher proportions at higher incomes), or "regressive" (lower proportions at higher incomes). There might be minimum income levels below which no repayment would be required.

Income-contingent loan proposals have also varied in the extent to which funds required for *"subsidies"* would be provided by the Federal Government, the borrowers themselves, or a third party (e.g., State governments).

(See page 25)

Such "subsidies" are required to pay the costs of loan defaults, interest rate subsidies (if applicable), or waivers of repayment in such instances as borrower unemployment, death, etc. Most such "subsidies" are paid by the Federal Government under current U.S. Department of Education student loan programs.

With respect to the *interest* charged on student loans, income-contingent loan proposals have varied from no interest charges at all to various sorts of "market" (purportedly, unsubsidized) interest rates. However, in a majority of cases, proponents of income-contingent loans have proposed that interest rates be relatively high and unsubsidized, especially in comparison to the current U.S. Department of Education student loan programs.[3]

Aside from interest rates, the liability for interest payments during periods when repayment is deferred (as when the student is in school), has varied among income-contingent loan proposals. Interest may be forgiven during such periods, may be accrued (i.e., added to principal) for later repayment, or be required to be paid currently.

Another basic type of variation in income-contingent loan proposals in the *source of loan principal*. It might be proposed that loan principal be provided by the Federal Government directly, by State governments, by postsecondary institutions, by private financial markets, or by some combination of these sources. If not provided directly by the Federal Government, the loan principal might be federally guaranteed against borrower default (as is the case currently with the Guaranteed Student Loan program).

A final basic type of variation in income-contingent loan proposals is related to *eligibility to borrow*. Under the current NDSL program, and under the GSL program for

TABLE 1. INTEREST ACCRUAL DURING IN-SCHOOL AND GRACE PERIODS: THREE SAMPLE BORROWER CASES UNDER PROPOSED NDSL INCOME-CONTINGENT LOAN PROGRAM

Borrower case	Total initial principal	Years in-school plus grace period	Total accrued interest	Grand Total principal (including accured interest)
1	$ 5,000	3	$ 1,842	$ 6,842
2	$13,000	5	$ 6,725	$19,7225
3	$23,000	6	$11,695	$34,695

an Income Contingent Approach Proposed by the Reagan Administration[1]

borrowers with family income over $30,000, only those with financial need may receive loans.

However, under many income-contingent loan proposals, the borrower's family income or financial need is *not* a factor in determining loan eligibility. This is the case because the primary focus of attention in income-contingent loan proposals has been on borrower income *after* graduation, not on his or her family income while attending school.

CHARACTERISTICS OF THE NATIONAL DIRECT STUDENT LOAN INCOME CONTINGENT REPAYMENT PROPOSAL

The National Direct Student Loan/income-contingent loan (NDSL/ICL) provisions described *in specific detail* thus far by the Administration include the following:

after an initial, two-year "fixed schedule" repayment period, repayment rates are to be based on a combination of borrower income and aggregate amount borrowed (including accrued interest that has been capitalized), with the rates ranging from 5 to 15 percent of "modified adjusted gross income";

annual loan limits of $2,500–$4,500 for undergraduates, $10,000 for graduate/professional students;

aggregate loan limits of $17,500 for undergraduates, $40,000 overall;

borrower interest at the "market" rate of the interest rate for 91-day Treasury bills plus 3 percent, adjusted annually;

only students demonstrating financial need would be eligible to receive loans;

institutional assessment of "reasonable" administrative and collection (in cases of default) costs to be paid by student borrowers with respect to their own loans; and

borrower interest to accrue during all in-school and other deferment periods (currently, no interest is charged during these periods).

Other proposed provisions for the NDSL/ICL program have been described only in *general terms* thus far, with essential details unavailable. These characteristics include:

no apparent limit on the maximum repayment period;

it is apparently intended that the costs of borrower defaults be paid by those who default, by charging them the costs of collection, legal, and other actions necessary to make such individuals repay their loans;

an initial 2-year "fixed schedule" repayment period, with a *minimum* repayment of $30 per month per $10,000 in loan principal, before repayments become income-contingent;

after the initial 2-year "fixed schedule" repayment period, repayments to be based on the "modified adjusted gross income" of the borrower, with the precise definition of this income measure to be determined by regulations;

unspecified changes to the formula for allocating Federal capital contributions to educational institutions; and

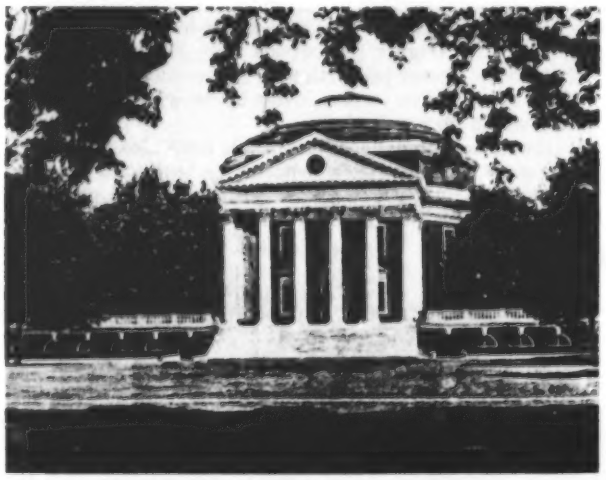
collection responsibility "generally" maintained at the level of individual educational institutions.

The percentages of income to be repaid by borrowers under this proposed student loan program are relatively high (in comparison to most other income-contingent loan proposals offered in the past), and rise quickly with income at relatively high aggregate loan levels. If, as is implied in the Administration's documents accompanying this proposal, the income to which these percentages are to be applied is a measure of "gross" (rather than "net") income, it is especially noteworthy that repayment rates of up to 15 percent could be applied to individuals with income below $5,000. This is in contrast to the Administration's tax reform proposal, which would exempt individuals at such income levels from paying Federal income taxes. These assessment rates would minimize the total repayment period, while placing significant burdens on borrowers, especially those at relatively low income levels.

A major distinction between the Administration's NDSL/ICL proposal and most earlier income-contingent student loan proposals is the treatment of cases of borrower default, death, or disability. Under virtually all other income-contingent loan proposals, it has been provided that student loan obligations would be cancelled in cases of borrower death or disability, and assumed that certain borrowers will default on their loans.

Other loan proposals have provided that subsidies to cover the resulting costs either come from the Federal Government, be "mutualized" among the pool of other borrowers, or be paid by other agencies. In contrast, the Administration's current NDSL/ICL proposal apparently assumes that each borrower would be fully responsible for costs resulting from default, disability, or death. In cases of default, educational institutions would be authorized to charge the responsible borrowers "reasonable" col-

(Continued on page 25)



The Rotunda at the University of Virginia

Japan-U.S. Economic Relations

Could bilateral economic relations with Japan be at a critical turning point? Japan's economic decisionmakers express their views on their country's relationship with the United States, causes of bilateral problems and some solutions.

DICK K. NANTO

Trade friction between the United States and Japan has evolved into one of the major international economic issues facing U.S. policymakers. Pushing this issue to the forefront has been a bilateral trade deficit which in 1985 reached $50 billion in Japan's favor. More than 200 bills have been introduced in Congress addressing some aspect of this problem, and pressures have been building to solve it through legislative means. Since resolving bilateral differences, however, depends partly on actions by Japan, it would be useful to understand how these issues are perceived by their decision-makers, themselves.

This study explores current perceptions among Japan's key economic decisionmakers on issues relating to U.S.-Japan economic relations. the information was gathered through in-person interviews with 60 of Japan's key decisionmakers conducted in Tokyo during July and August 1985.[1] The persons selected included 15 government officials, 11 members of the House of Representatives in the Diet, 19 business executives, and 15 from other influential sectors (5 executives from business research and interest groups, 5 college professors, and 5 executives or persons from the media).

The variety of information gained in the interviews does not lend itself to a simple summary. Among Japan's key decisionmakers, however, the typical perception seems to be that the country has arrived as a world economic power. In view of their trillion dollar economy (surpassed only by that of the United States and accounting for 1/10th of world output) and their highly competitive export sector, they see their country as having joined the exclusive fraternity of economic superpowers. Along with those of the United States and Europe, they consider their policies to be important to maintain the free world economic system—particularly their policy initiatives in support of international trade talks, market liberalization, and economic assistance to developing nations.

Despite the recognition that their country has arrived at economic superpower status, these decision makers saw Japan as still being highly dependent on the United States, not only for markets and military security, but as a partner in a complementary relationship that includes horizontal as well as vertical links. This economic dependency on the United States was seen as desirable and likely to deepen in the future—particularly in areas such as direct investment, joint business ventures, and technology exchange.

The *predominant assessment* of the state of bilateral economic relations with the United States was that it was good overall, but perhaps at a critical turning point. Economic forces— market integration and business ties—seem to be pulling the two countries closer together, while political forces—trade disputes—seem to be pushing them apart. Virtually all who said the relationship was at a dangerous point went on to assert that whether or not it deteriorated further depended on resolving the current trade friction. A few were concerned that among the Japanese people, resentment was building at what they considered to be the endless and emotional nature of U.S. demands.

When comparing these results to a similar study done in 1982, it is apparent that many of the decisionmakers perceived that the bilateral relationship had worsened over the past three years. In the 1982 study, such concern was not evident.

Negotiations with the United States over trade issues were perceived as having strengthened the bilateral relationship primarily because they solved short-term problems, helped avert crises, and opened avenues of communication. The one in six who thought negotiations did not strengthen the bilateral relationship felt that such activities established the image that Japan could not be trusted, that solving one problem only invited more pressure from the United States which raised the level of frustration in Japan, and that negotiations gave the impression that the bilateral trade deficit actually could be reduced by removing trade barriers when such barriers accounted for only a small proportion of the total deficit.

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VIEWS of JAPAN'S ECONOMIC DECISIONMAKERS

The major source of problems in the relationship was unanimously attributed to the bilateral trade friction. The friction was considered to be virtually synonymous with the bilateral trade imbalance—the focal point of the bilateral disputes. Defense burden sharing also was mentioned.

The bilateral trade imbalance was seen as being caused primarily by macroeconomic policies in both countries that resulted in high U.S. interest rates, a soaring value for the dollar (although since the interviews, the value of the dollar has dropped considerably), and slack sales demand in Japan for imports.

Japan's trade barriers also were considered important in terms of the politics of the friction but not as a major cause of the bilateral trade imbalance. The bulk of the respondents, however, believed that their bilateral trade surplus with the United States had become so large that even if it were not an economic problem, it certainly had become a political one. Few, moreover, recited the often-heard argument that bilateral trade imbalances have little meaning because trade should be considered in a multilateral context with a surplus with one country (e.g. the United States) offset by a deficit with another (e.g. Saudi Arabia).

The most effective solutions to the trade friction in the view of most of the persons interviewed required a change in macroeconomic policies—primarily on the part of the United States but also in Japan—to lower interest rates and induce a depreciation of the dollar. There also was wide agreement that the value of the dollar could be reduced through direct intervention into foreign exchange markets (which actually occurred in September 1985, a month after the interview period). Many also favored Japanese economic policies that would stimulate domestic demand to increase imports and deflect some potential exports into local markets.

Continuing to eliminate Japan's remaining trade barriers also was seen as effective in quelling U.S. complaints, even though they thought that such measures would not increase import levels enough to bring the bilateral trade imbalance down to a politically acceptable level. Many felt that American businesses also could take greater advantage of the import liberalization that has taken place and make a greater effort to sell in Japan.

U.S. protectionism or Japanese export restraints were seen by many as ineffective solutions to the trade problem. Even though such policies might provide temporary relief for distressed industries and an easing of political pressures, they were viewed as just an inducement for more such demands for protection. As a result, more and more trade would fall under government control. The total level of trade would be diminished, and world economic activity would suffer.

When pressed to say what impact the economic problems could have on politico-security ties between the two nations, about three in ten answered that economic problems should be, or actually were separate from security and political issues. Therefore, they saw no impact or were unwilling to specify any effect. They thought that economic issues should be, or actually can be handled within an economic framework.

Nearly as many, however, warned that if economic tensions continue, there could be adverse political effects within Japan. The possible consequences they cited included: a sudden rise of nationalism, a backlash against the United States, a weakened Nakasone government and Liberal Democratic Party, and an emotional reaction by the Japanese Diet. Some noted, however, that any resentment among the general population toward the pressures and demands of the United States appeared still to be in its nascent stage and so far had taken the form of grumbling rather than outright hostility.

As for changes in Japan's decisionmaking and power structure, the most significant was a stronger relationship role being assumed by Prime Minister Nakasone in the policymaking process. Particularly noteworthy has been Nakasone's insistence that trade liberalization go forward despite objections from entrenched special interests.

Also mentioned was a parallel gain in power by Nakasone's Liberal Democratic Party. This was viewed as a natural outcome of the more political nature of the policies that had to be determined. Given the lack of a national consensus on whether or not imports should be liberalized and with market opening measures requiring sacrifices by certain sectors of the economy, decisions were becoming increasingly politicized.

The gain in power by the political establishment was seen as being at the expense of the bureaucracy, which also was said to be declining in influence relative to the private sector. The bureaucracy was finding it more and more difficult to intervene directly in specific sectors of the economy through administrative guidance and was being forced to consult more with political leaders in drafting market-opening measures and new legislation.

A change was noted in the way that the Japanese government negotiates. Several ministries heretofore not involved directly in international trade talks now appear at the negotiating table. Traditionally the Ministry of Foreign Affairs or Ministry of International Trade and Industry conducted trade talks. The newcomer ministries (such as Health and Welfare or Posts and Telecommunications) have made concessions more difficult to obtain, since they tend to have less international experience, to be domestically oriented, to be less involved with Japan's export industries, and to be less interested in liberalizing Japan's markets.

The economic decisionmakers were confident in the competitiveness of their industries and were somewhat puzzled at what they perceived to be the intensity of the American displeasure, particularly in Congress, at their economic successes. Still they viewed the relationship with the United States as important and appeared willing to go to considerable lengths to resolve bilateral differences.

—For further information see: U.S. Library of Congress. Congressional Research Service. Japan-United States Economic Relations: Views of Japan's Economic Decisionmakers. Report No. 86-52 E, by Dick K. Nanto. Washington 1986. 83 p.

[1]This study followed up a similar one done in 1982. See: U.S. Library of Congress. Congressional Research Service. Perceptions of Members of Japan's Economic Elite on U.S.-Japan Trade Issues. Report no. 83-89 E, by Dick K. Nanto. Washington, 1983. 103 p.

Because of the small number of persons in the sample, the results are not necessarily representative of the perceptions of all key economic decisionmakers in Japan. This study was not designed to be a methodologically rigorous survey of opinion, but an exploration of current Japanese leadership perspectives on U.S.-Japan trade issues.

STANLEY R. SLOAN
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RONALD O'ROURKE

The IMPLICATIONS for STRATEGIC ARMS CONTROL of NUCLEAR ARMED SEA-LAUNCHED CRUISE MISSILES*

PRINCIPAL CONCLUSIONS

U.S. and Soviet deployments of strategic nuclear sea-launched cruise missiles (SLCMs)* raise important issues for U.S. strategic and arms control policies. It is not possible, without extremely intrusive measures, to distinguish between nuclear and non-nuclear SLCMs, or to identify them as short- or long-range systems without very close collaboration between the partners in an arms control agreement.

The analysis on which this article is based concludes that, given current technologies and the existing state of U.S.-Soviet relations, no approach that would bring current generations of nuclear-armed land-attack SLCMs within the framework of a comprehensive numerical arms control regime could be verified with an acceptable degree of confidence, with the possible exception of a total ban on production and deployment of all cruise missiles. Given the wide range of military applications for cruise missiles, neither the United States nor the Soviet Union appears interested in such a comprehensive ban. Therefore, any strategic U.S.-Soviet arms control agreement negotiated in Geneva will likely exclude limits on an increasingly important category of strategic nuclear weapons.

The United States and the Soviet Union may judge the costs associated with deployment of the current generation of SLCMs as tolerable, particularly because this generation is not viewed as increasing the potential for either superpower to mount a successful first-strike against the other. But the next generation could pose even more difficult problems for arms control and strategic stability. New technologies will improve the maneuverability of cruise missiles and "stealth" design features will allow them to "hide" more easily from enemy defenses. These enhanced capabilities could raise much more serious concerns about the destabilizing "first-strike" potential of strategic SLCMs.

The current generation of SLCMs appears, as a practical matter, beyond the reach of arms control. If the United States and the Soviet Union should wish to do so, however, it may be possible to limit the numbers and deployment modes of the next generation prior to production and testing of the systems. The next generation of SLCMs constitutes both a complex challenge and a possible opportunity for arms control policy.

THE SCOPE AND CONTEXT OF SLCM DEPLOYMENTS

The United States and the Soviet Union have strong incentives to deploy a variety of SLCMs on surface ships and submarines. Both have already deployed some systems and have other under development.

Cruise missiles are small, accurate, inexpensive and flexible in terms of range, payload, and launching platforms. They are consequently very useful weapons in the eyes of both U.S. and Soviet defense planners for many nuclear and non-nuclear roles. Their flexible characteristics and applications make them a classic "gray-area" weapons system, capable of filling strategic as well as non-strategic roles.

The versatility of cruise missiles is demonstrated by the multiple roles they already play in U.S. and Soviet military forces. The United States uses nuclear-armed air launched cruise missiles (ALCMs) to enhance the capability of some B-52 bombers. It is deploying nuclear-armed ground launched cruise missiles (GLCMs) in five West European NATO countries to strengthen NATO's nuclear deterrent.

The U.S. Navy, with a fleet of large-deck aircraft carriers, has been less dependent than the Soviet Navy on SLCMs for anti-ship missions. But since the late 1970s, the United States has been deploying non-nuclear anti-ship Harpoon cruise missiles in large numbers and is now deploying the Tomahawk anti-ship missile (TASM) on a variety of platforms. These deployments are intended to increase the effectiveness of subsequent attacks by aircraft and to free aircraft from missions more appropriately handled by anti-ship SLCMs. In addition to the anti-ship Tomahawks, the United States has begun to deploy longer range Tomahawks as nuclear or non-nuclear land-attack weapons.

The United States currently plans to procure 758 Tomahawk nuclear-armed land attack missiles. They will be deployed on submarines and surface ships. At the same time, more than 3,000 non-nuclear Tomahawks, externally indistinguishable from the nuclear version, will be produced for deployment on submarines and on surface ships.

Lacking large-deck aircraft carriers, the Soviet Navy has for many years relied heavily on sea- and air-launched cruise missiles for attacking surface ships. The Soviets are now building their first large-deck carrier, but their dependence on SLCMs for non-strategic roles will continue into the 21st Century. Since 1960, the Soviet Union has deployed a "short-range" nuclear and land-attack SLCM with a range estimated at over 500 miles.

The Soviet Union is expected soon to begin deploying a long-range nuclear-armed SLCM (the SS-N-21), if it has

*For the purposes of this discussion, "strategic" refers to U.S. and Soviet nuclear delivery systems that are capable of and intended for striking targets within the territory of the other.

not done so already. Although Soviet deployment plans have not been made public, the Soviet Union would appear to have the capacity to deploy a substantial force of SS-N-21 missiles. Under some scenarios, both sides could decide to deploy nuclear land-attack SLCMs in even large numbers.

Once current programs have been completed, both sides will have deployed many long-range, hard-target capable, nuclear attack systems on a variety of naval vessels. These missiles will be mixed in with other nuclear and non-nuclear systems on those vessels, in many cases sharing the same launch system.

THE ARMS CONTROL DILEMMA

Why Control?

U.S. and Soviet deployment of substantial numbers of strategic nuclear SLCMs adds new dimensions to the strategic relationship between the two countries. These deployments raise a number of potential policy issues.

Crisis stability. It can be argued that current deployments of strategic SLCMs enhance crisis stability by complicating first-strike calculations by the other side, while not adding significantly to a first-strike threat themselves. This may be so, even though the proliferation of a new class of strategic nuclear weapons might seem to some observers to multiply the number of scenarios in which nuclear weapons might come into play.

Even if this generation of strategic SLCMs enhances strategic stability, however, it is far less certain that the next generations will have such a benign effect. The next generations of U.S. and Soviet cruise missiles may well incorporate "stealth" technologies to help the missiles more easily evade enemy radar. They may also include the ability to maneuver to evade enemy defenses. Such systems would be an effective response to strategic defenses deployed by the other side. Furthermore, these capabilities would make strategic SLCMs much more threatening as potential first-strike weapons, given their potential for flying undetected and unimpeded to their targets.

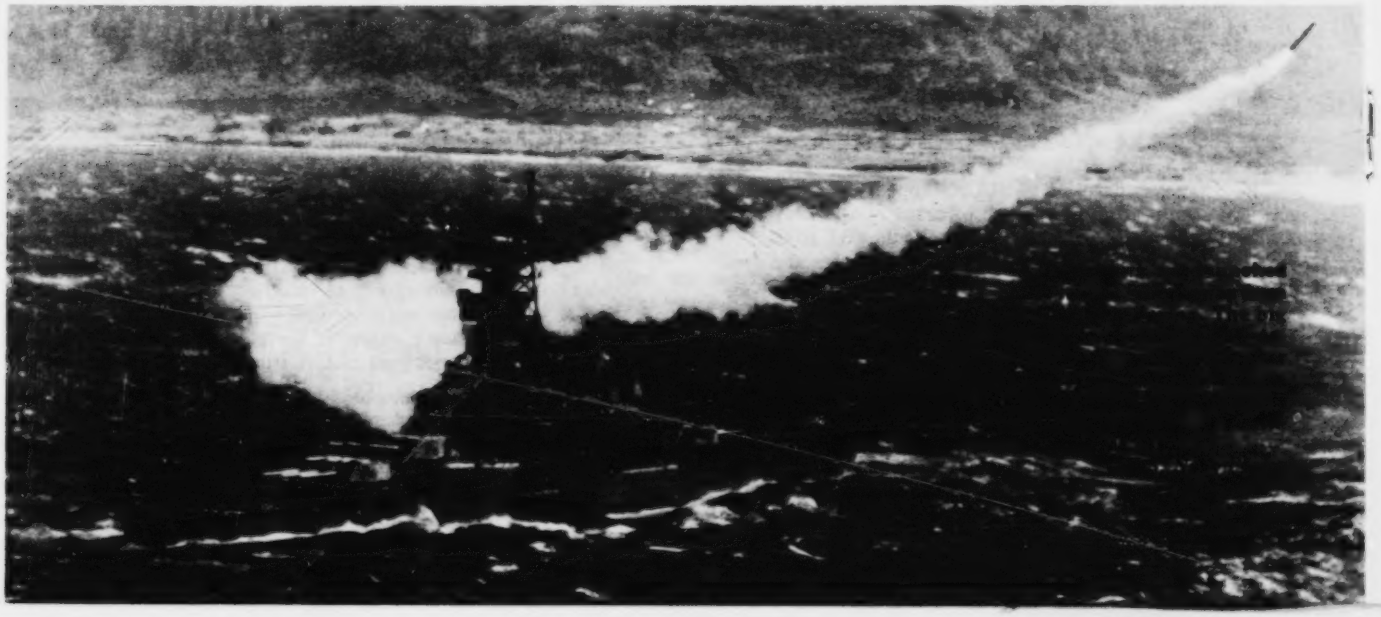
Numerical arms control. Both the United States and the Soviet Union have accepted as their current arms control objective 50 percent reductions in strategic nuclear weapons. The United States has not included long-range cruise missiles in its reduction proposal, leaving a substantial category of strategic weapons out of the equation. If SLCM deployments remain uncontrolled, thousands of SLCMs might have to be considered as strategic nuclear SLCMs, absent the ability of distinguished nuclear from non-nuclear, and short-range from long-range. This would seriously undermine attempts to place comprehensive numerical limits on strategic nuclear weapons.

The Soviet Union has proposed banning long-range (range of over 600 kilometers) SLCMs. But, due to geography, this approach might be highly disadvantageous to the United States. Soviet submarines armed with "short-range" land attack nuclear SLCMs would cover most strategically-important American targets by taking up firing positions off the U.S. coasts, while the United states requires long-range SLCMs to place Soviet territory at similar risk.

Strategic defense. If the United States hopes that strategic defense can eventually make nuclear weapons obsolete, strategic nuclear SLCMs will either have to be controlled or neutralized. President Reagan's Strategic Defense Initiative now focuses particularly on defenses against ballistic missiles, but the long-term promise of the initiative cannot be realized unless cruise missiles and strategic bombers are eliminated through arms control or neutralized by additional defense systems. Defenses against these air-breathing threats could add substantially to the cost of strategic defenses.

Tomahawk	*Land Attack*	*Antiship*
Missile weight with booster	2,650 lb 3,200 lb	2,650 lb 3,200 lb
Length with booster	18.2 ft 20.5 ft	18.2 ft 20.5 ft
Maximum diameter	21 in.	21 in.
Wing span	8.6 ft	8.6 ft
Cruise speed	High subsonic	High subsonic
Approximate operational range	2,500 km* (1,350 nmi*) 1,290 km† (700 nmi†)	463 km (250 nmi)
Warhead	Nuclear or conventional	Conventional

*Nuclear †conventional



ow to Control? The Verification Challenge

ne way to deal with the problems raised by strategic ear SLCMs would be to eliminate or regulate deploy- t of such systems. Monitoring and verifying compli- with such approaches under current conditions, how- , is extremely difficult.

ecause cruise missiles can be relatively small and thus ile and easily concealed, it can be extremely difficult nonitor their deployment and movement. Because can carry nuclear or non-nuclear warheads with no ge in the missile's exterior appearance, it can be al- t impossible to distinguish between those that carry ear and those that carry non-nuclear munitions. They be designed, programmed and fueled to fly for dis- es from under 100 miles to well over 1,000 miles, also no change in external appearance. As a consequence, an be equally difficult to distinguish between short- ge systems, designed for battlefield or anti-ship roles, long-range strategic systems.

ruise missiles therefore pose certain problems for s control, including the fact that prior to deployment, virtually impossible employing national technical ns to distinguish between ground-launched, air- ched, or sea-launched versions. But long-range land- ck SLCMs cause greatest concern because they raise icularly difficult verification issues. They are the first se systems to be deployed in both nuclear and non- ear modes, and there is currently no effective means iscriminating betweeen the two modes for the pur- es of an arms control agreement. They are being de- ed in launch systems that will also be used for weap- other than nuclear land-attack SLCMs, adding to the iculty of discriminating strategic SLCMs from non- tegic systems.

fter a review of literature and discussions with a vari- of experts on the subject, we have concluded that, n available technologies and the current levels of po- al trust and confidence between the United States and Soviet Union, no approach that would bring current erations of nuclear-armed land-attack SLCMs within framework of a comprehensive numerical arms con- regime could be verified with an acceptable degree of idence, with the possible exception of a total ban on luction and deployment of all cruise missiles.

urrently-available national technical means of moni- ng compliance (overhead reconnaisance, signals intelli- ce, and so forth) are not sufficient to provide precise information on the numbers of long-range nuclear cruise missiles produced and deployed. Any arms control regime that sought to place numerical limits on sea-launched cruise missile deployments would require very instrusive monitoring—on-site inspection and/or monitoring with installed remote sensors—and cooperative measures, such as information exchanges, agreed deployment modes or patterns, limits on testing, and restrictions on encryption of information. This cooperation would have to be far more extensive than either the United States or the Soviet Union have so far accepted or even proposed.

In summary, verifying compliance with a numerical control scheme for currently-deployed SLCMs would require significantly greater U.S./Soviet trust and cooperation than currently appears possible. Even if the political climate should improve sufficiently to make such cooperation appear feasible, substantial technical obstacles would remain.

How to Control? Conflict with U.S. and Soviet Military Plans

Because it is difficult if not impossible to distinguish between strategic nuclear SLCMs and SLCMs intended for other roles, effective control might require banning the testing, production and deployment of SLCMs or, for that matter, banning cruise missiles altogether. At least in terms of current U.S. and Soviet military strategy and force posture, both of these options would appear to be non-negotiable. Even more limited SLCM control approaches could raise important issues for U.S. and Soviet military planning.

Almost any approach which would bring these systems within the framework of a comprehensive numerical arms control regime would, if implemented, restrict to one degree or another the non-strategic (particularly anti-ship) capabilities of either the U.S. or Soviet navies. All numerical reduction approaches would require some substantial restrictions on the role of sea-launched cruise missiles more generally in addition to limits on the strategic nuclear role of the missiles. This conclusion suggests that both the Soviet Union and the United States might at present find such limitation schemes in direct conflict with other force posture goals and military plans.

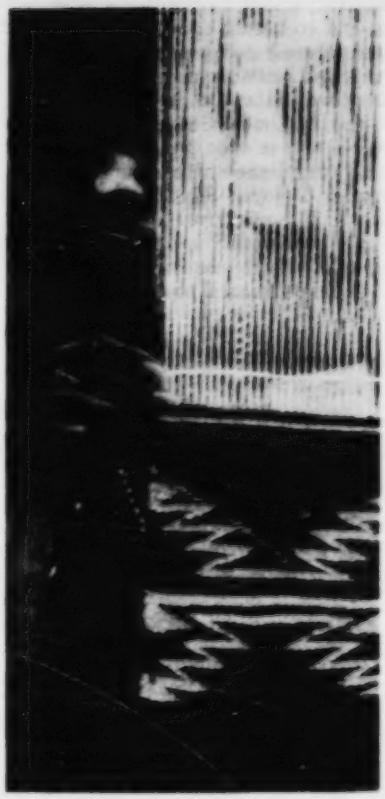
In addition, both the United States and the Soviet Union presumably see strategic SLCMs as important hedges against the potential deployment by the other of an effective ballistic missile defense. Neither might be willing to give up this hedge in a condition of great uncertainty conterning the future relationship between strategic defenses and offenses.

THE END OF ARMS CONTROL?

This suggests that the deployment of long-range nuclear sea launched cruise missiles has for the indefinite future of severely complicated prospects for comprehensive numerical limitations on all categories of strategic nuclear weapons. This does not necessarily mean that strategic nuclear arms control has reached a dead end. Carefully designed limitations on intercontinental ballistic missiles, sea-launched ballistic missiles, bombers, and other nuclear delivery systems as well as on strategic defenses might still improve strategic stability and help control the nuclear arms competition.

The current generation of SLCMs may have escaped the grasp of arms control. But if the United States and the Soviet Union choose to do so, it may be possible to

NAVAJO-HOPI RELOCATION



Bruce Dale (c) National Geographic Society

Rug Weaving

This article is based on CRS Issue Brief No. 86021, "Navajo-Hopi Relocation" by Richard S. Jones.

A territorial dispute between two Indian tribes—the Navajo and the Hopi—in northeastern Arizona that has simmered for over a hundred years has reached a climax resulting in the relocation from their homes of over 4,000 individuals to date.

The relocation is the result of a law passed by Congress in 1974 (P.L. 93-531) which resulted in a court-ordered partition of land claimed by both tribes and on which members of both tribes live.

Because the overwhelming majority of people required to relocate are Navajo, the Navajo Tribe has opposed the relocation process or sought to have the law amended to ease the burden of relocation on those whom they consider to be innocent victims of the situation. The Hopi, surrounded by the Navajo and living on a reservation one tenth as large as that of the Navajo, consider the disputed land to be rightfully theirs, and their tribal government has thus far refused to negotiate any change in the existing relocation requirements.

This situation has generated considerable media attention and concern in Congress. Criticism of the speed and manner in which the relocation has progressed has been widespread, emanating primarily from Navajo spokesmen, some Members of Congress, and other observers.

The Navajo and the Hopi have competed for the same territory for centuries. The Hopi, a farming people, are thought by anthropologists to have inhabited the same area for nearly a thousand years, while the Navajo, a nomadic sheephearding people, are believed to have entered the region around the year 1500. The land involved in the dispute is that withdrawn from the public domain under an executive order on December 16, 1882, for the use and occupancy of the Hopi "and such other Indians as the Secretary of the Interior may see fit to settle thereon." This area is now surrounded by the Navajo Reservation as defined by the Act of June 14, 1934 (48 Stat. 960). The dispute arises from the fact that Navajos have settled on a portion of the land in question.

While in 1882 there were approximately 300 Navajo living in the executive order area, that number had grown to some 10,000 by 1974. The Hopi had long resented what they considered encroachment of the Navajo on lands which were theirs; they ultimately sought redress from Congress, which in 1958 authorized the tribes to initiate court proceedings to determine rights and interests of the tribes "as may be fair in law and equity."

In 1962 an Arizona district court ruled that the Navajo and Hopi have joint, undivided equal rights and interests in that portion of the 1882 Executive Order Area which lies outside Land Management District 6 (defined in 1943 as the exclusive Hopi area, or "reservation.") The area designated by the court as jointly held by the two tribes was called the "Joint Use Area" (*Healing v. Jones*, 210 F. Supp. 125, D. Ariz. 1962). The decision was affirmed by the U.S. Supreme Court in 1963.

Subsequently, Congress enacted the 1974 statute, which resulted in a court-ordered partition of the Joint Use Area (carried out between 1977 and 1979).[1] The statute mandated relocation of Indians of each tribe then

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limit the next generation. If—and perhaps only if—limits are applied *prior* to the testing of the next generation, a variety of possibilities may be available. The next generation could be banned altogether; or, limits could be placed on the technologies permitted to be associated with the system (banning "stealth" design, for example).

The two sides could agree to design and deploy the strategic SLCMs in a fashion more consistent with arms control, by incorporating "functionally observable differences" into the systems and by deploying them in unique launch modes and only on designated strategic SLCMs platforms.

The next generation of SLCMs constitutes both a complex challenge and a possible opportunity for arms control policy.

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See also the authors' CRS Report no. 86-25F, "The Implications for Strategic Arms Control of Nuclear Armed Sea Launched Cruise Missiles," Dec. 10, 1985.

RICHARD S. JONES

ving on lands partitioned to the her, and established the Navajo and opi Indian Relocation Commission to rry out this mandate.

The statute further required that ch relocation family be provided by e Commission with adequate hous- g and that each relocation family be id for the habitation from which it is quired to move. A limited number of fe estate leases for disabled Navajo eads of households living on Hopi- rtitioned lands, and up to ten life es- tes for Hopi heads of households liv- g on Navajo-partitioned lands, are thorized by the 1980 amendments to e 1974 act.

The 1974 statute, as amended in 80, also authorized expansion of the avajo reservation by 400,000 acres accommodate Navajo relocatees, ho comprise the overwhelming ma- rity of those required to move.

All minerals within or underlying rtitioned lands are to be jointly wned by the two tribes.

Relocation was to be completed five ears after acceptance by Congress of relocation "Report and Plan" sub- itted by the Relocation Commission. he Report and Plan was transmitted Congress on April 8, 1981, and be- ame effective 90 days later. elocation is thus scheduled to be ompleted by midnight, July 6, 1986 lthough current law prohibits elocation of any Navajo household ntil replacement housing is avail- ble).

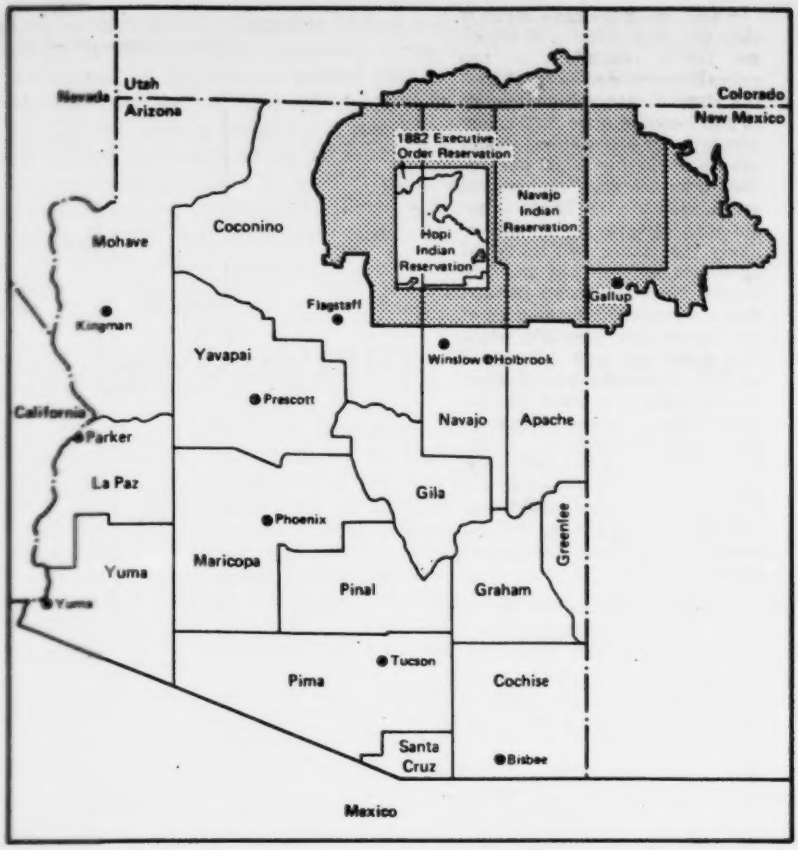
Relocatees have three choices for elocation sites: (1) on the reservation; 2) to off-reservation sites; or (3) in e case of the Navajo, to new lands dded to the Navajo Reservation.

If the relocatees choose to relocate a site on the current reservation, e Commission tries to assist them in btaining homesite leases. If the deci- on is to move off-reservation, the ommission is responsible for as- sting relocatees to decide where to ove and to identify and acquire ousing.

urrent Status

As of April 1986, according to elocation Commission figures, a total f 972 Indian families had relocated 30 to on-reservation homesites and 42 to off-reservation sites). These omprise 933 Navajo families elocated from the Hopi-partitioned nds (405 to on-reservation and 528 to

Map 1
Navajo and Hopi Indian Reservations



Navajo and Hopi Indian Relocation Commission. Report and Plan: 1983 Update. June 1983. p.47.

off-reservation sites); and 13 Hopi families from Navajo-partititioned lands (12 to on-reservation and one to off-reservation homesites). An additional 26 Navajo families evicted from the exclusive Hopi area (non-partitioned area) as a result of a court decision have also received relocation benefits (13 to on-reservation; 13 to off-reservation sites).

A total of 1,539 families certified as eligible remain to be relocated: 1,529 of these are Navajo while 10 are Hopi. According to the Commission's most current analysis, at least 239 of these Navajo families are still living on Hopi-partitioned lands, while no Hopi are living on Navajo-partitioned lands. The remaining 1300 Navajo families are in the process of being relocated.

In addition, the Commission estimates that there are approximately 70 other Navajo families on the Hopi-partitioned lands who have not applied for relocation benefits.

Problems

Problems have centered around criticisms that relocatees have been provided in some instances with inadequate housing, that counseling of relocatees, both before and after relocation, by the Relocation Commission has been inadequate; that an inordinate number of relocatees have been "forced" to resell their homes and defrauded in the process by unscrupulous agents; and that the slow pace of relocation will result in the failure to meet the July 1986 deadline and excessive cost overruns.

To these charges the Relocation Commission responds that it has initiated a program to repair or renovate defective housing acquired during the first three years of the relocation program; that it has provided counseling services to the best of its ability within the limits possible; the steps to minimize resale, such as deed restrictions, have been implemented with regard to off-reservation housing. The House Appropriations Committee investigations staff, which studied the problem in early 1985, notes that "there is no question that certain relocation Indians, when they sold

While the Hopi have made it clear that they cannot now negotiate for a resolution of the relocation problem—a "problem" the Hopi do not recognize—we cannot foreclose some further opportunity for negotiations should events, including tribal perceptions of forthcoming Congressional action, motivate the Tribes to negotiate. However, it seems unlikely that there will be tribal agreement between now and July 6, 1986. Time constraints demand that the responsible agencies of government now undertake whatever action they deem appropriate to solve intertribal issues. If action is to be taken, it is hoped that the whole range of issues—not just today's relocation problem—be addressed. Unless a comprehensive plan be thoughtfully developed and put in place, fundamental tribal disputes may persist for still another century. (From the Morris Report).

their relocatee homes, were taken advantage of by unscrupulous ... agents. Fraud does not appear to be the main factor ... instead it has been a lack of preparedness on the part of the relocatees to move off-reservation."

There is no doubt that the 1986 deadline cannot be met and that cost overruns are substantial. The Commission contends that it has relocated "the maximum number of families ... possible within the limit of our appropriations."

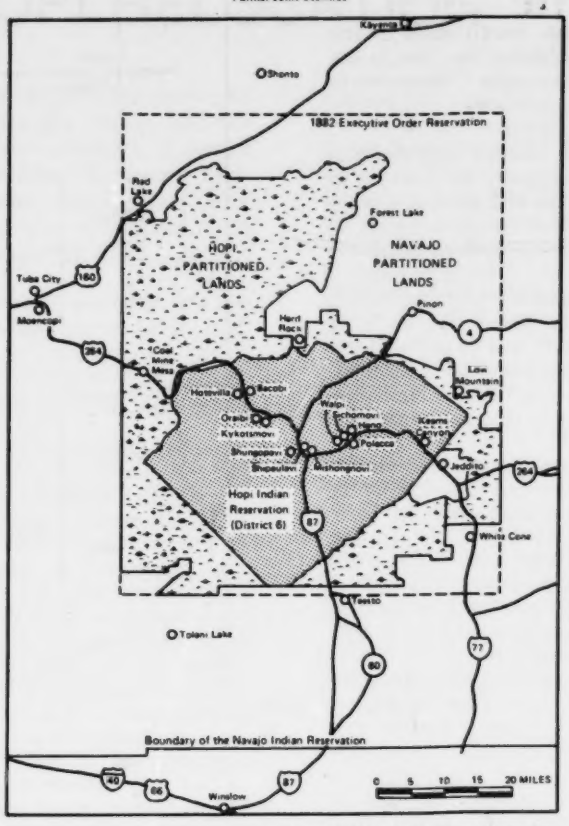
Differences Between the Navajo and Hopi Concerning Implementation: The Morris Report

In order to address the mounting differences between the Navajo and Hopi tribes with respect to the implementation of relocation, President Reagan on February 8, 1985, commissioned former Secretary of the Interior William P. Clark to determine if agreement over such differences could be effected. On October 21, 1985, a statement prepared by Richard C. Morris for Mr. Clark, reporting their findings, was released.

This report sets forth the Hopi position, the Navajo position, and various proposals for resolution of the conflict that had been made as of that time.

Hopi Position

In 1882 the Hopi were vested with land which they consider their exclusive reservation and which was later encroached on by Navajo settlers. The Hopi nevertheless accepted the court's decision in *Healing v. Jones* and the subsequent partition mandated by the 1974 Relocation Act. That resulted in the transfer of 950,000 acres to the Navajo, who already had a reservation ten times the size of the Hopi Reservation. To propose any exchange of lands or to otherwise modify the settlement in order to allow some Navajos to stay where they are is unacceptable.*



Navajo and Hopi Indian Relocation Commission. Report and Plan: 1983 Update. June 1983.p.48.

Navajo Position

While Navajo leaders have long advocated repeal of the Relocation Act, they now "appear to recognize that, because of substantial performances under the act, injustice and confusion would be created by repeal." They nevertheless seek amendments which would ease the burdens—both physical and emotional—of relocation for Navajo individuals whom they view as caught in the grip of a situation not of their own making, and which they believe inflicts undue suffering and hardship upon the innocent.

Proposals for Resolution: No Present Solution Seen

Proposals for resolution of the conflict have included full execution of existing law, resulting in removal of all Navajo from the Hopi-partitioned lands, voluntarily or involuntarily; and negotiated compromises. The latter have included:

Redrawing the Joint Use Area partition line to include on the Navajo side those Navajos now residing on the Hopi side, and compensating the Hopi for lands so taken; and —

**The Morris Report notes that there are some traditional Hopi leaders who oppose relocation of the Navajo and that the Hopi Tribal Council has lacked a quorum "during a major portion of the time we have communicated with the Hopi." Nonetheless, "the decision not to negotiate has been conveyed to us not only by the Chairman but by other tribal leaders.... Nevertheless, the consensus view remains in some little doubt as, traditionally the Hopi indicates dissent by nonparticipation rather than by expressed opinion."*

JOSEPH P. RIVA JR.

The Chinese government is attempting to increase oil production to fuel a growing domestic economy and for export to earn foreign exchange. In the late 1950s and early 1960s, as the Soviet technicians were leaving, the Chinese found their largest oil fields and assumed that such discoveries would continue. Subsequent exploration experience, however, proved otherwise. The failure to find additional large fields and the complexity of the geology, were factors in a decision to invite international oil companies to explore in China. The results of this exploration have, thus far, been modest. China appears to have an important petroleum endowment that will be of considerable domestic benefit, but will not have a major impact on world oil trade. Current production is sustained by intensive major field infill drilling, waterflooding, and even enhanced oil recovery activities. A significant increase in oil production under such conditions is unlikely.

THE PETROLEUM ENDOWMENT of CHINA

OIL PRODUCTION AND PROVED RESERVES

In 1985, China produced about 903 million barrels of oil. This represented a production increase of nearly one-third in ten years, but production did decline slightly in 1980 and 1981. The recent recovery was accomplished mostly by intensively exploiting the two largest fields, Daquing and Shengli, which together account for about two-thirds of China's oil production. The super-giant Daquing field 600 miles northeast of Peking, contributes about 45 percent of China's total oil output, but is producing over 70 percent water and, even with additional in-fill drilling, waterflooding, and enhanced oil recovery, is expected to soon decline. Shengli has also been intensively exploited and cannot be expected to make up for the decline in production of the larger Daquing field. What is needed is the discovery of another super-giant field. This has not happened nor does the geology indicate that such a discovery is likely.

Proved oil reserves in China have been estimated at about 18.4 billion barrels. Much of this is in Daquing and Shengli 250 miles southeast of Peking. The reserves/production ratio of China is, thus, about 20/1. An average of about 10 percent of the recoverable oil reserve can be removed from a field each year without causing reservoir damage that will result in a decreased ultimate oil recovery. A 20/1 average reserves/production ratio indicates an area of only moderate development intensity with a significant percentage of under exploited fields.

However, recently the Chinese appear to quickly and intensively develop their oil fields, drilling thousands of wells in the process. This suggests that the proved oil reserve estimate may be somewhat high, and the 20/1 reserves/production ratio likewise too high.

Undiscovered Recoverable Oil Resources

Several U.S. Geological Survey publications and the technical literature contain partial assessments of Chinese petroleum potential. An integration of these partial assessments, coupled with an understanding of the geology of China's sedimentary basins, indicates that her undiscovered recoverable oil resources may be about 38.3 billion barrels. Of this total, 10.7 billion barrels are thought to occur offshore and 27.6 billion barrels onshore. There is a range in such assessments, and since much of China's geology is not known in detail, the range is wide. At a 95 percent probability of occurrence, China is estimated to have at least 14 billion barrels of undiscovered oil, while at a 5 percent probability of occurrence it may contain as much as 90 billion barrels. The oil status of China is summarized in table 1.

Allowing Navajos who refuse to relocate to continue living on lands they now occupy while recognizing Hopi jurisdiction, perhaps renting the land from the Hopi.

The first option is opposed by the Navajo; the Hopi will not agree to exchanging any of their Joint Use Areas lands; and agreement on the third option cannot be reached.

The Morris Report concludes that "it is regretted that both Tribes do not embrace negotiation as a means of solving their complex differences."

Congressional Action: Proposed Amendment

On Feb. 27, 1986, Representatives Morris Udall and John McCain of Arizona, introduced H.R. 4281, to amend the relocation process as mandated under current law.

The amendment would extend the deadline for relocation of Navajos now living on Hopi-partitioned lands, and transfer to the Navajo Tribe approximately 360,000 acres of the 900,000 Joint Use Area acres partitioned to the Hopi. This would reduce by almost 90 percent the number of Navajos still living on Hopi land who would have to relocate, according to the bill's sponsor. Fewer than 60 Navajo families would then be subject to relocation, according to this source.

Navajos choosing not to relocate could apply for a 160-acre land assignment where they currently reside. The U.S. government would pay the Hopi for such assignments, and they would be compensated for the lands transferred to the Navajo Tribe with approximately 360,000 acres of land which have been added to the Navajo Reservation to accomodate the relocatees. In addition, substantial mineral royalties from specified coal leases would be paid by the Navajo to the Hopi Tribe.

No action has been taken on this amendment although a hearing was held in May by the House Committee on Interior and Insular Affairs. While the future remains uncertain, the drama will surely continue to play itself out against a backdrop of intense concern on the part of all participants:

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TABLE 1. Summary of Chinese Oil Status (in billion barrels)

Cumulative Production	9.4
Proved Reserves	18.4
Undiscovered Onshore Resources	27.6
Undiscovered Offshore Resources	10.7
Total Chinese Oil Endowment	66.1

It can be seen from the table that about 42 percent of China's estimated oil endowment has already been discovered, and 14 percent produced and consumed. Using the 0.6 percent of total recoverable resource base per year discovery average that has been observed in the United States and a reserves/production ratio decline to 9/1 (indicating a mature development situation), a yearly average production of the current 903 million barrels of oil could be sustained for about 20 more years. With a total oil endowment estimated at about 66 billion barrels, China had three times the original oil of the United Kingdom, but only a quarter of that of Saudi Arabia. Thus, while containing important amounts of oil, China is far from a potential "swing" producer.

Oil Exports

It is an exporter, however, and in 1985 exported about 212 million barrels, some 23 percent of its total production. Japan purchased 81 million barrels (38 percent), and the United States was in second place, importing 28 million barrels of Chinese oil.

China is not an important exporter, however, accounting for only about 3 percent of the world oil trade. If, as is sometimes projected, China may need all of its oil in the future for its modernization program, the world oil market will not be much affected. If China should have to import significant amounts of oil in the future, the world oil market may then be impacted.

In the short term, China is trying to increase oil exports, as this means increased foreign exchange with which foreign technology can be purchased. Oil plays an important role in China's foreign exchange. Exports in 1985 were 40 percent above the 1980 level and accounted for 20 percent of China's foreign earnings. Although spending heavily on foreign oil production equipment might result in more oil, it would defeat China's goal of broadening its technology purchases.

Therefore, the emphasis is on spending as little as possible internationally to achieve oil technology transfer. While the drop in oil prices has reduced China's export revenues, the country's commitment to increased oil production is expected to continue, because 77 percent of China's oil is consumed in its isolated, but growing domestic market and the rest remains one of China's most attractive sources of foreign exchange.

Future Oil Production Potential

To reach its goal of quadrupling 1980 industrial and agricultural value by the year 2000, China plans to increase its annual oil production to 1.095 billion barrels in 1990 and to 1.46 billion barrels in 2000 (a rise of 62 percent). To achieve these, she must count heavily on known major fields. Daquing is projected to decline and then stabilize for ten years at 365 million barrels of oil annually. This may be a realistic expectation for a shorter term, but when a field as intensively exploited as Daquing declines, usually production continues to fall in spite of infill drilling, additional waterflooding, and enhanced oil recovery operations.

Output from Shengli is projected to reach 365 million barrels annually by 1990, an increase of 55 percent over 1985 production. To sustain this sort of increase, Shengli would have to be a super-giant field. It has been producing for 22 years and 7,000 wells have been drilled. Normal field growth of this magnitude would not be expected at this late date, and super-giant size had not before been attributed to this field. Thus, there is some doubt that Shengli can reach such an increased level of production.

Likewise, much is expected of China"s other major fields. Most of these are combinations of many pools and individual production zones divided by the complex terrestrial sedimentation patterns and faulting that characterize China's geology. This allows for field growth as additional zones are exploited, but makes recovery difficult as large continuous reservoirs are not common and premeabilities are often poor.

Together, these other major fields contribute about 23 percent of China's current oil production. Some of them are old and in decline, yet perhaps as much as 256 million barrels of annual production would be required from these fields to meet the 1990 goal. This is an 18 percent increase over their contribution in 1985.

It is unlikely that production from those mostly older fields could be increased by such a factor, especially in so short a time. Thus, the goal of increasing annual oil production from the current 903 million barrels to 1.095 billion barrels appears elusive.

A further increase to 1.46 billion barrels ten years later depends upon considerable exploration success offshore and in western China, as production from the known major fields will have further declined. Exploration results thus far, both offshore and in the western basins, have not been very encouraging, casting considerable doubt on the year 2000 production expectations.

Offshore Petroleum

Regulations on the exploitation of offshore petroleum resources in cooperation with foreign enterprises were adopted by the State Council of the People's Republic of China on January 12, 1982, promulgated and enforced 18 days later. Allocation of leases was accomplished by bidding. Typical offshore terms included the following requirements: a work program; the training of Chinese; the transfer of technology; the payment of the entire cost of exploration and about half of the cost of development; a strong procurement bias for Chinese goods and services; and a $1 million bonus payment.

Exploration and development costs are recoverable if production is realized, but there is a 17.5 percent consolidation tax and royalty and a 50 percent tax on the contractor's net income. An important bid parameter is the X-factor which determines the fraction of the profit oil (gross oil minus cost recovery and royalty oil) that is split between the foreign contractor and the Chinese in proportion to their respective working interests. The X-factors are bid for specific increments of profit oil production and can slide from 70 to 10 percent depending upon the size of the field.

Pictured is a Pershing missile. "Intermediate Range Nuclear Forces," by Paul Gallis, will be discussed in the July/August CRS REVIEW.

Air Force Photo

Thus, profits on very large oil fields could be less than 50¢ per barrel, while very small fields could yield over $3.00 per barrel profits. While the low end results in a rather small profit, China's terms for marginal fields compare favorably with those of other producing states.

Six offshore sedimentary basins are being explored for petroleum: the Bohai Gulf basin, east of Peking, the South Yellow Sea basin, the East China Sea basin, the Pearl River Mouth basin, the Yingge Sea basin, and the Beibu Gulf basin. In the Bohai Gulf basin, the Chengbei field went on stream on October 1, 1985. It is a relatively small field with reserves of about 25 million barrels and a projected peak output of about 2.8 million barrels per year.

There are two other producing areas in the Gulf of Bohai, the Haisi fields located close to the western shore, and the Shi Ju Tao area to the north. Production from the two areas is quite small. Original per well production was substantial, but rapidly declined.

Exploration in the South Yellow Sea basin has been unsuccessful. As the major structures have been drilled, a second phase of exploration has been initiated by the oil industry testing smaller, deeper, more subtle traps. The Chinese, drilling in the East China Sea basin, have reported a number of oil and gas discoveries. China has indicated that this basin appears to have the greatest oil protential of all its offshore basins. It has been suggested that this potential may explain the absence of leasing to foreign oil companies, but instead it may be that it is impractical for foreign companies to work in the basin because of the longstanding jurisdictional disputes involving the People's Republic of China, Japan, Korea, and Taiwan. The reported discoveries have not as yet been developed.

The Pearl River Mouth basin in the South China Sea has attracted considerable attention as a potential petroleum source, as significant amounts of oil have been recovered from Chinese test wells. However, in the first full year of drilling, 1984, no commercial fields were discovered. Currently, of the more than 35 wells drilled, six have yielded petroleum. The discovery which appears closest to being commercial is Xijiang where two test wells recovered significant amounts of oil on separate structures. The two fields, together, may contain enough reserves to warrant development.

Other discoveries are being evaluated, in the Huizhou and Wenchang areas. As drilling continues, it appears that commercial production will eventually be established from the Pearl River Mouth basin. Prospects remain favorable although a number of drilling locations have been proven barren.

Foreign company exploration in the Yingge Sea basin in the South China Sea has been confined to one sizeable block. The *Glomar Java Sea* drill ship commenced operations early in 1983. By June she had completed the discovery well in a large reservoir of natural gas about 65 miles south of Hainan Island. (But this success was to be her last. Necessarily topheavy with her huge drill tower, she capsized and sank during a typhoon in October of the same year. All 81 aboard perished. Her wreck was later located and photographed.)

Plans have been made to produce the gas in this large reservoir from a single platform set in 300 feet of water.

with about ten production wells. Peak production is estimated at about 350 million cubic feet per day in 1992, from a reserve thought to be about 2.6 trillion cubic feet. A 65-mile, 30-inch pipeline will be constructed to Sanya on the south coast of Hainan Island and a seaprate 550 mile line will be built across the island continuing on to the Chinese mainland.

The Beibu Gulf basin is located in the Gulf of Tonkin in the South China Sea. The Chinese have drilled eight test wells in the basin, six of which were reported to have encountered oil. Industry drilling began in the Beibu Gulf basin in 1982. A discovery was made in the Weizhou structure with several wells drilled. A possible lack of reservoir continuity has been indicated by the delineation wells. In order to limit risk if continuity is lacking, two phases of development have been planned.

The first phase will provide the necessary information on reservoir behavior and the second will correspond to the extension and development of the entire field. The first phase will consist of six wells, one vertical and five deviated, all drilled from a single location. As soon as production has provided basic information on reservoir behavior, water injection will be initiated with two of the wells converted to injection wells.

Natural Gas

Information on China's natural gas is even more fragmented than on oil. The Sichuan basin of south central China is the nation's largest gas producing region. The basin contains 60 gas fields which together produce over 60 percent of China's total annual gas output of about 420 billion cubic feet. An integration of several U.S. Geological Survey reports indicates a Chinese natural gas status similar to that shown in table 2.

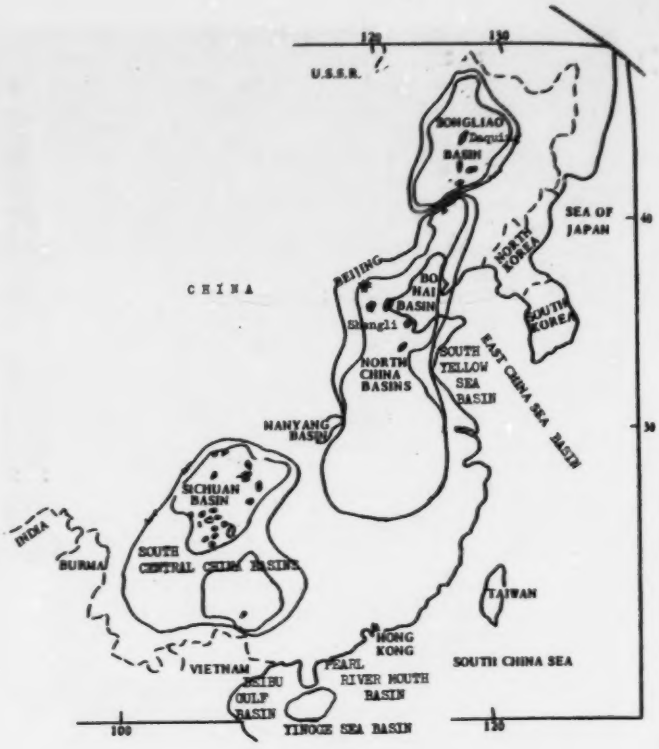
TABLE 2. Summary of Chinese Natural Gas Status (in trillion cubic feet)

Cumulative Production	6.4
Proved Reserves	30
Undiscovered Onshore Resources	105
Undiscovered Offshore Resources	124
Total Chinese Natural Gas Endowment	265.4

It can be seen from table 2 that only 14 percent of China's gas endowment is estimated to have been discovered and that cumulative production is quite small at 2 percent. China appears to have had a significant gas endowment, comparable to that of Norway, and it is virtually unexploited. China's current reserves/production ratio is 71/1 indicating an under utilization of existing gas reserves. With mature development of proved reserves, China may be able to produce as much as 3 trillion cubic feet of gas per year. Gas is more difficult to transport than oil. The reserves, to be used, have to be located relatively near centers of consumption, or long pipelines must be laid.

CONCLUSIONS

Petroleum exploration in China over the past decade has reduced the hope for the discovery of a giant offshore field to replace projected oil production declines in the older onshore fields. Discoveries in Bohai Bay had high initial production rates that rapidly declined. In the South China Sea, results thus far indicate a possibly smaller oil resource than anticipated, scattered among a number of reservoirs.



Sedimentary Basins in Eastern and Offshore China

In onshore exploration, much heavy oil has been found that will require thermal recovery. The largest such field is Karamay, in the remote Zhungaer basin, about 1500 miles west of the Pacific Coast. The field is currently being produced for local consumption, but if planned large scale steaming is to go into effect, a pipeline will be needed to transport the oil. Thermal and other enhanced oil recovery techniques may add to China's future oil production, but this will be a costly and probably a slow process. Natural gas is an under utilized resource, but increased production will also require additional infrastructure, such as pipelines.

China's goal of increased oil production will initially depend upon even more intensive exploitation of a few old, major fields, and then upon the discovery of new large fields. Since increasing production in the older fields, which already have thousands of wells, and the discovery of new large fields, in regions of complex geology and poor reservoir prospects, will both be difficult; the goal of a continuous increase in oil production may prove elusive.

See Also CRS Report No. 86-102 SPR. The Petroleum Endowment of The People's Republic of China, by Joseph P. Riva, Jr. This report is footnoted with specific references pertaining to the incorporated information. *and* Energy Technology Transfer to China. A Technical Memorandum of the Office of Technology Assessment.

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(Homeless from page 5)

IV. *Income Supports*

Homeless persons may be eligible for income transfers or assistance but frequently lack the knowledge or skill to obtain any benefits.

A summary prepared by the Federal Task Force on the Homeless lists the programs in Table A, among others.[12]

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[1]U.S. Department of Housing and Urban Development. A Report to the Secretary of the Homeless and Emergency Shelters. Washington, D.C. May, 1984. p. 7.

[2]*Ibid.*, pp. 22–23.

[3]Basic Shelter Research Project, UCLA, January 1985, cited in House Committee on Government Operations. The Federal Response to the Homeless Crisis. House Report 99–47. April 18, 1985, p. 25.

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[5]*Ibid.*, p. 18.

[6]Housing the Homeless. Proceedings. The American Institute of Architects. Oct. 1985. pp. 13–14.

[7]See footnote 1, p. 34. Estimate was for Jan. 1984.

[8]Based on information telephoned by operators of the facilities in each of the cities.

[9]The higher figures are found in a report of the House Government Operations Committee cited in footnote 3. The lower estimates are in HUD's Report on the Homeless, footnote 1, p. 14.

[10]Report of House Government Operations Committee, *op cit.*, p. 14.

[11]The Section 8 Existing Certificate and Voucher programs which could be used for homeless people require a 1-year lease and tie the subsidy to the tenant. This makes the program unworkable for people who may not stay in place for a year or longer. A revision in the statute permitting public agencies to be parties to the lease would facilitate rental of Section 8 units to the homeless.

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(Student Loans from page 10)

lection costs. It appears to be implicitly assumed that no loans would remain in default forever and have to be "written off". In the case of borrower death, a "Federal claim" would be placed against the borrower's estate for the remaining loan amount.

Finally, the lack of a limitation of the loan repayment period—again a contrast to most other income-contingent loan proposals—implies that borrowers would be required to continue loan repayment into their retirement if the obligations have not been previously liquidated.

ANALYSIS OF SELECTED IMPLICATIONS OF THE NATIONAL DIRECT STUDENT LOAN/ INCOME-CONTINGENT LOAN PROPOSAL

This section is based upon calculation of loan borrowing and repayment cycles for a limited number of sample cases, using a CRS computer model that simulates the student loan borrowing and repayment process.[4] These sample cases are intended to reflect the range of probable amounts borrowed and repaid under the loan program proposal as specified thus far.

The *first* set of calculations below is based on the *Administration's* proposed NDSL/ICL plan, while the *second* set of calculations is based on a pair of hypothetical *alternative* repayment schemes. In preparing these calculations, several assumptions had to be made regarding basic program characteristics (see the full report for a description of these).

Loans were calculated for three typical sample borrower cases, as follows:

Case 1: a student borrowing $2,500 for each of two years of post-secondary education, earning an initial income of $15,000 after completion of this program;

Case 2: a student borrowing $2,500 for each of two undergraduate years, $3,500 for a third year, and $4,500 for a fourth undergraduate year of postsecondary education, and earning an initial income of $20,000 after graduation; and

Case 3: a student borrowing the same amounts as the student in case 2 while an undergraduate, plus $10,000 for one year of graduate school, and earning an initial income of $25,000 after completing this program.

Effect of Interest Accrual on Amounts Borrowed and Repaid

A key feature of the Administration's NDSL income-contingent loan proposal is the accrual of interest, to be added to principal and eventually repaid, during periods when the loan is not in repayment status—the in-school, grace, and any other deferment periods.

In most cases, such accrual of interest would add substantially to total borrower obligations at the beginning of the repayment period. Table 1 shows the effect of interest accrual during the in-school and assumed 1-year post-school deferment periods for our three sample cases.

Clearly, the accrual of interest that is unpaid over a period of several years adds rapidly to a borrower's total loan amount. This effect is amplified by the application of interest charges to interest charged, but unpaid, in previous years (accrued), and added to principal to increase the loan amount.

Projections of Net Interest Rate Paid by Borrowers

As noted earlier, the current borrower interest rate for National Direct Student Loans is 5 percent; and is applied only after the repayment period begins, so the net rate over the entire life of a loan is below 5 percent. Before 1980, the borrower interest rate of NDSL loans was 3 percent. Under the Administration's NDSL/ICL proposal, this rate would be raised to the variable rate of that for 91-day Treasury bills plus 3 percent, which would be applied as soon as a loan is disbursed.

At present Treasury bill rates, the borrower rate under the proposed program would be approximately 10 percent, although somewhat higher rates are projected for the future by the data sources used in the CRS student loan simulation model. Based upon these projections and the time periods for loan repayment under various repayment options (see following section), we estimate that overall borrower interest rates, taking the entire period of loan borrowing and repayment into account, for the three sample cases described above would be in the range of 11–12 percent.

Proposed, and Possible Alternative, Income-Contingent Repayment Functions

A final key feature of the NDSL/ICL proposal is the schedule of rates of borrower income that is to be repaid annually in order to liquidate the loans. Using the CRS student loan simulation model, and the assumptions outlined above, we have estimated the repayment cycle under the Administration's proposal as well as under two hypothetical alternative repayment rate schedules that would repay these sample case loans before the borrower reaches the arbitrarily selected age of 45 (for borrowers assumed to begin postsecondary education at age 18). Finally, we have limited repayment rates under the alternatives to the range of 5–15 percent of income, the same overall range as proposed by the Administration.

Administration's Proposed Repayment Rates

In our three sample borrower cases, the repayment rates proposed by the Administration for the NDSL/ICL program would lead to relatively quick repayment, at relatively high borrower burden (in terms of percentage of income repaid annually). Assuming that borrowers began their postsecondary education (and began receiving loans) in the fall of 1985, and excluding the special 2-year "fixed schedule" repayment period provision of the Administration's proposal, loans were estimated to be fully repaid in 1993 for sample case 1, 1999 for case, 2, and 2003 for case 3. The estimated length of the total (post-graduation and initial deferment) repayment period was estimated to be 6 years in case 1, 10 years in case 2, and 13 years in case 3. Thus, only in the sample case with the highest aggregate loan level did the estimated repayment period exceed the current law limit of 10 years.

However, the loan repayment burden would be substantial under the Administration's proposal in these sample cases, ranging from 10 to 15 percent of total income. In comparison to the alternative loan repayment rate schedules discussed below, the Administration's proposed schedule would favor relatively quick loan repayment at the expense of relatively heavy borrower burden.

Possible Alternative Repayment Rate Schedules

It was found that two types of alternative repayment schedules accomplish the goals described above for each of the three sample cases. Under the first of these types of schedules, repayment rates are graduated "progressively" with income according, for example, to the following scale:

TABLE 2. Percentage of Income to be Repaid Under Alternative 1

Income level	Percentage of income to be repaid
$15–25,000	5%
$25–35,000	7.5%
$35–45,000	10%
$45–55,000	12.5%
$55,000 and above	15%

A second type of alternative repayment schedule that was found to "just" pay off the loans within the assumed repayment period in all sample cases was one in which the income repayment percentage varies not with income level but with the amount borrowed (in terms of initial principal—i.e., not considering accrued interest). In this case, an income repayment percentage of .65 percent per $1,000 of initial principal borrowed, with a minimum of 5 percent, was found to be sufficient. In the sample cases, the resulting total percentage of income to be repaid annually would range from 5 percent in Case 1 to 15 percent in Case 3.

Comparison of Proposed and Alternative Repayment Rate Schedules

In the preceding two sections of this paper, we have discussed the results of loan repayment calculations using three repayment schedules:

(1) the Administration's proposal;

(2) an alternative with repayment rates graduated on the basis of income only; and

(3) an alternative with repayment rates graduated on the basis of amount borrowed only. In comparing these three types of repayment schedules, the first and third would clearly place a greater burden[5] on graduates with large loans but relatively low income. Under the second schedule, such high loan/low income individuals might never fully pay off their loans by the arbitrarily selected age for termination of payments (45), necessitating either an extension of the repayment period or cancellation of the remainder of what they owe. Graduates with relatively high amounts borrowed and relatively high income would face high repayment rates under each of the three schedules. Borrowers with relatively low loans and income would face relatively low repayment rates under each of the three schedules, although the pace at which repayment rates rise with income is faster under the Administration's proposal than under the second repayment schedule. Borrowers with relatively small loans but relatively high income would face greater repayment burden under the first and second repayment schedules.

It must be emphasized that these calculations are simply illustrative. They depend heavily on numerous assumptions, the sample amounts borrowed and income levels, and on the goal of "just" paying off the sample case loans by age 45 under the two alternative schedules. *Other repayment schedules* that fit within these constraints could undoubtedly be found.

The Administration's proposed amendments to the NDSL program arrived at a relatively late stage in the current legislative process of extending and amending the Higher Education Act (HEA). Such legislation was passed by the House (H.R. 3700) on December 4, 1985 and reported by the Senate Committee on Labor and Human Resources (S. 1965) on March 19, 1985. Since detailed provisions of the Administration's proposed HEA amendments were not available before March 18, they have not been directly given serious consideration in the development of the legislation thus far. It is possible that such consideration could occur during Senate floor debate on S. 1965.

Wayne Riddle is a specialist in education, Education and Public Welfare Division.

[1]This article is based on a CRS report of the same title, Report no. 86-669 EPW, April 23, 1986. 29 p.

[2]For a more thorough discussion and analysis of income-contingent student loan concepts and issues, see U.S. Library of Congress. Congressional Research Service. Income Contingent Loans: Background and Analysis. Typed Report by, Wayne Riddle, April 29, 1982. Washington, 1982. 37 p.

[3]Currently, the borrower interest rate is 5 percent for National Direct Student Loans and 8 percent for Guaranteed Student Loans (except that borrowers who earlier received GSLs at 7 or 9 percent pay that rate on new GSLs as well).

[4]For a description of this computer model, see U.S. Library of Congress. Congressional Research Service. The Congressional Research Service Student Loan Simulation Model (Version 1.0): A Brief Discussion Of Functions, Capabilities, And Limitations. Typed Report, by Wayne Riddle, April 4, 1986. Washington, 1986. 12 p. Other CRS analysts significantly involved in developing the model were Kenneth Cahill and James B. Stedman.

[5]It should be emphasized that "burden", as used in this discussion, refers to the annual percentage of income repaid, not the ultimate total amount of money repaid.

Harvesting Wheat

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See "Grain Quality Debate," by Carl W. Ek in the next issue of the CRS REVIEW.

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"Kachina," see Navajo/Hopi Relocation, page 16.

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CONGRESSIONAL RESEARCH SERVICE REVIEW

INTERMEDIATE NUCLEAR FORCE TALKS

WELLHEAD PROTECTION

U.S. GRAIN QUALITY

SOCIAL SECURITY; FISCAL POLICY QUESTIONS

STRATEGIC OFFENSE AND DEFENSE
ARMS CONTROL TALKS

CONGRESS' CONTEMPT POWER

U.S. HISPANIC POPULATION

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The INTERMEDIATE NUCLEAR FORCE TALKS at GENEVA

PAUL E. GALLIS

A Pershing Missile

Paul Gallis is an analyst in West European affairs, Foreign Affairs and National Defense Division

In March 1985, the United States and the Soviet Union resumed negotiations in Geneva on Intermediate Range Nuclear Forces (INF). Each side has asserted that it seeks the ultimate elimination of such systems, though they differ on the systems defined as INF and on the methods for counting such systems. In the United States view, a "global" reduction in Soviet SS–20 warheads is a critical factor for progress towards a treaty. In January 1986, the U.S.S.R. made a dramatic proposal at Geneva for the complete elimination of all U.S. and Soviet intermediate-range nuclear missiles in the European theater, provided the British and French governments agree to freeze their nuclear forces at current levels and forego planned modernization programs. The Soviet proposal would require a radical alteration of the nuclear deterrent policies of France and Great Britain. Despite current optimism for an INF agreement, the two sides in fact remain far apart on the question of British and French nuclear forces.

The INF talks have important ramifications for all the European NATO states. Though the NATO allies wish to see an improvement in U.S.-Soviet relations, some governments believe that the elimination of U.S. INF systems would weaken the U.S. guarantee for Western Europe and raise fears of serious divisions within the Alliance.

The Nuclear Forces in Question: US and Soviet INF Systems

The Pershing II missiles and ground-launched cruise missiles (GLCMs) currently being deployed in Western Europe are owned and controlled by the United States. The Pershing II missiles and GLCMs carry one warhead and are mobile, highly accurate systems able to reach targets in the Soviet Union. Since the late 1960s, NATO has adhered to the policy of "flexible response" in the event of a Warsaw pact attack on Western Europe, and the Pershing IIs and GLCMs play an important role in the range of options that comprise this policy. NATO's mix of conventional and nuclear forces is intended to deter or defeat an assault by Warsaw Pact forces.

Should NATO's initial response prove ineffective, the alliance would escalate its effort to defeat invading forces, utilizing intermediate-range and stragetic nuclear forces if necessary. The forward deployment of INF systems underscores the policy of deterrence by signalling the Soviet Union that nuclear systems controlled by U.S. forces could be employed in the effort to prevent an invasion of Western Europe.

The core of the Soviet INF systems is the SS–20, a mobile solid-fuel missile with three warheads. The missile is highly reliable and accurate. Since the late 1970s, the Soviets have deployed 441 SS–20s, with a reported 270 west of the Urals in range of West European targets and 171 east of the Urals, able to strike targets in the People's Republic of China (PRC), Japan, South Korea, as well as U.S. naval bases in the Far East. Unlike several shorter range Soviet missiles such as the SS–21 and SS–22, the SS–20—with a range of 2500 miles—need not be stationed in Eastern Europe in order to strike storage centers, or staging areas.

See Page 14 for a further discussion of the Geneva talks.

In order to destroy the SS–20 in the event of a conflict, NATO would have to decide to strike deployment fields not in Eastern Europe but in the Soviet Union—a step that clearly would risk igniting a broadened nuclear exchange. Moreover, the mobility of the SS–20 provides the Soviets with a weapon that could be difficult to locate and destroy in wartime.

The Soviets' shorter-range systems have the potential for an increasingly important role in Warsaw Pact planning. Stationed in East Germany and Czechoslovakia, these systems, if armed with powerful conventional rather than nuclear warheads, could play a critical role in the event of a conflict in Europe. Many of NATO's most important military installations—such as airfields, storage depots, and air defense systems—are within 350 miles of the East German-West German border. The SS–22s in particular, with a range of approximately 550 miles, could reach many of these installations, as well as Pershing II and GLCM deployment sites in the rear of NATO. Some observers believe that these short-range Soviet systems, if armed with conventional warheads, could inflict severe damage on critical NATO installations and at the same time avoid to some degree the risk of a retaliatory NATO nuclear attack on the U.S.S.R. that an initial use by the Soviets of nuclear systems would likely entail.

Proposals and Objectives of the Two Sides at Geneva

Though the announced objective of the United States is to eliminate both sides' nuclear arsenals, its more immediate goal may be to arrest the build-up in INF systems and to achieve appreciable reductions as a step towards improving the political climate between the Soviet Union and the United States. Since U.S. INF systems play an important political role in enhancing the U.S. pledge to its NATO allies to extend deterrence to the European theater, some allies oppose any agreement that would require removal of all Pershing IIs and GLCMs.

On November 1, 1985, the United States proposed capping its INF missile launcher deployment in Europe at 140 if the Soviets would reduce their SS–20 launchers able to strike NATO Europe to the same figure. As of December 31, 1985, the U.S. had 140 launchers in Western Europe (108 Pershing II launchers, each carrying one missile, and 32 GLCM launchers, each carrying four missiles). Additional GLCMs are now being deployed. The United States seeks to retain the freedom to mix the proportion of GLCM to Pershing launchers, with both the

Soviets and the United States arriving at an approximately equal number of warheads—420 to 450—on their INF systems.

On February 22, 1986, President Reagan reformulated this proposal in a letter to Soviet General Secretary Mikhail Gorbachev. The United States proposed the elimination of all INF systems within three years. U.S. negotiators proposed that each side would reduce to 140 launchers in Europe by the end of 1987, 70 launchers at the end of 1988, and eliminate all INF systems by the end of 1989. Proportionate reductions would be made by the Soviet Union in Asia as well during this period. The U.S. proposal excludes from negotiations Birtish and French nuclear systems, which the U.S.S.R. has insisted must be limited at Geneva.

The United States seeks "global" reductions of SS–20s for several reasons. Because the SS–20 is highly mobile, a reduction of SS–20s west of the Urals alone would allow the Soviets to move missiles stationed east of the Urals into the European theater in the event of a crisis. Undoubtedly, NATO would view such a step as a highly escalatory measure. A second reason for U.S. efforts to persuade the Soviets to reduce SS–20 deployments east of the Urals is to meet the concerns of Japan and the PRC, each of which has approached the United States to seek reductions in Soviet nuclear forces able to strike its territory.

Gorbachev made a dramatic comprehensive proposal for nuclear arms reductions on Jan. 15, 1986. The proposal envisions three stages of reductions by the year 2000, with the final stage resulting in the elimination of all nuclear weapons. The first stage of reductions, to occur between 1986 and 1994, would see "the complete elimination of intermediate range missiles of the USSR and the USA in the European zones... as a first step toward ridding the European continent of nuclear weapons."

Simultaneously, Great Britain and France would have to agree to halt current modernization programs of their nuclear systems, and the United States would have to agree "not to transfer strategic and medium-range missiles to other countries." Beginning with the second stage, in 1990, other nuclear powers would begin to destroy their nuclear systems.

Ostensibly, the Soviet Union's proposal is a radical departure from its earlier proposals. Previously, the Soviets had classified U.S. but not Soviet INF systems as "strategic". Reductions under the Soviet proposal of October 1985 would have required the United States to eliminate portions of its INF systems with no limitations on comparable Soviet systems. The current proposal skirts this definitional problem by proposing that systems that the United States considers "intermediate" be simultaneously reduced.

Previous Soviet offers had also included various formulas for counting French and British nuclear systems together with U.S. systems in order to achieve parity between NATO and Soviet nuclear weapons. France, Great Britain, and the United States have adamantly maintained that French and British systems are independent, with the United States exercising no control over their maintenance or firing. As such, the three allies insist that French and British nuclear forces are not subject to U.S.-Soviet negotiation at Geneva.

The January 1986 Soviet proposal breaks away from past insistence on compensation for French and British systems by requesting only a freeze in modernization plans and postponing the date for actual reductions. A clear objective of the Soviets, implicit in their previous positions and now explicit in this proposal, is to limit the growth of the nuclear forces of France and Great Britain. Though those forces are quite small today in comparison to U.S. and Soviet nuclear forces, by the mid-1990s British and French nuclear warheads would total over 1000—a force able to threaten a wide variety of targets in the USSR.

Another departure from previous positions was that the Soviets dropped their insistence that progress in the talks on space weapons was necessary before progress could occur in the INF forum. The Soviets formally stated that an agreement on INF could be reached without an agreement in the talks on space weapons.

Prospects at Geneva

Formidable obstacles to an agreement on INF systems remain, despite the current air of optimism evident in Washington. On Jan. 31, 1986, the French and British governments rejected the Soviet offer to freeze their modernization plans for their nuclear forces. France has a well developed doctrine of deterrence governing its role as an independent nuclear power that enjoys widespread public support. Since the 1960s, French leaders across most of its political spectrum have voiced distrust of the U.S. nuclear guarantee and have supported the goal of building a modern nuclear force capable of inflicting unacceptable damage on the Soviet Union. By the mid-1990s France will possess new mobile land-based missiles and a submarine force carrying nearly 600 nuclear warheads. The French government has stipulated that in order for France to engage in the negotiations for limiting its nuclear forces, the United States and the U.S.S.R. must

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first substantially reduce their own arsenals, the East-West imbalance in conventional and chemical weapons in favor of the East must be redressed, and missile defense systems must be renounced. Great Britain has its own nuclear modernization program under way, with plans to purchase the U.S. D-5 missile for a growing force of Trident submarines.

One objective of the Soviet proposal clearly is to prevent the United States from selling the D–5 to Great Britain. The proposal asks an end to the "transfer" of U.S. nuclear systems to other nations.

Aspects of the U.S. proposals of November 1985 and February 1986 may prove attractive to the Soviets, particularly the opportunity to bargain over the number of Pershing IIs to be deployed. The Pershing II can reach its target much more rapidly than the GLCM; in a nuclear exchange, the Pershing II would therefore pose a greater threat to command-and-control centers and to other targets where adequate warning of attack would be necessary in order to utilize, disperse, or shelter equipment and forces. In addition, the slower speed of the GLCMs may ultimately make them vulnerable to improving Soviet air defenses. The U.S. Joint Chiefs of Staff have reportedly debated an acceptable minimum number of Pershing IIs for target coverage, with reports placing that figure in the 36 to 50 range.

Facility of verification of any reductions agreed to at the talks is a central objective of the Reagan administration. The U.S. effort to determine the exact number of SS–20s deployed in the European part of the USSR illustrates the importance of the issue of verification. In October 1985, the Soviets announced plans to reduce SS–20s west of the Urals to 243 (from a reported 270), "dismantle" their "stationary facilities," and concentrate the missiles "within one area" where the United States might verify their removal from combat status. However, press reports state that the Reagan administration considers the 27 missiles in question able to be easily reactivated.

According to one report, U.S. intelligence has not located the missiles. SS–20s are deployed in covered bays able to hold a regiment of nine missiles. If the United States has been unable to verify the dismantling of the bays but believes that some missiles have in fact been removed, then missile battalions from within each regiment may have been taken out of the bays. Such a procedure by the Soviets would complicate U.S. efforts to verify SS–20 reductions. This problem underscores the need for intrusive verification measures.

In January 1986, Gorbachev signalled the U.S.S.R's willingness to agree to verification "with regard to the weapons that are destroyed or limited" through "national technical means" or "on-site inspections" if the comprehensive Soviet offer is accepted. The United States has not publicly discussed its proposals in the area of verification procedures.

Political and Strategic Ramifications of the Talks

As part of the effort to reinforce the link between the United States and NATO Europe, the West European allies sought an approach that would strengthen deterrence and offer a means to induce the Soviets to limit SS–20 deployments. To this end, NATO formulated the "two-track" decision of modernizing its INF systems and offering ultimately to eliminate them if the U.S.S.R. would destroy its SS–20s. The Pershing IIs and GLCMs lend credibility to the U.S. nuclear umbrella because they are U.S. systems controlled by U.S. forces, and are able to strike Soviet territory. Presumably, were the United States to fire the missiles, the Soviets would respond with a nuclear attack on U.S. soil.

The European allies wish to see improved relations between the United States and the Soviet Union. In times of tension between the United States and the U.S.S.R., the domestic debates between left and right in most West European states become more heated. In times of good U.S.-Soviet relations, the domestic debates generally grow calmer. For this reason, most of the allies hope to see an arms control agreement reached at Geneva, but few would probably welcome an accord that would lead to the complete withdrawal of U.S. INF systems.

Though the allies agreed to the principle of deploying GLCMs and Pershing IIs in 1979, the actual road to deployment has led to often spirited debates in the five countries designated by NATO for basing the weapons. The course of the discussions at Geneva will continue to influence these debates.

U.S.-Soviet Relations and the Geneva Talks

Should the Geneva talks break down, most observers believe that the United States and the Soviet Union would return to the more tense, acrimonious relations that characterized the period from late 1979 through early 1985. President Reagan and Soviet leader Gorbachev sought the summit of November 1985 as a means not only to provide an impetus for the Geneva negotiations but as a symbolic event to indicate improved relations. Progress at the Geneva talks and another summit in 1986 are important for continuing a warming of relations.

At the moment, the two sides still have significant differences in position at Geneva. Some analysts believe that the Soviets may attempt to reach an accord in at least one part of the Geneva talks by the end of 1986. If such an accord proves impossible, then the Soviets will probably wait and try to reach an agreement with President Reagan's successor rather than negotiate with an administration nearing the end of its term. Should prospects for a 1986 U.S.-U.S.S.R. summit improve, the two sides might well view such a development as an impetus for forward movement at Geneva.

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DONALD V. FELICIANO

Wellhead Protection:

the New Federal Role in Groundwater Quality

Introduction

The potential threat of contamination of underground sources of drinking water is a growing concern within the United States.[1] Groundwater protection has traditionally been the responsibility of the States, but the national dimension of the perceived problem has led to more interest in the issue by the Environmental Protection Agency (EPA) and Congress. EPA's efforts have focused on better incorporating groundwater protection into its decision-making process for existing regulatory programs. The basis for the Agency's initiatives is the Groundwater Protection Strategy, issued in 1984.[2]

In the course of its growing concern about contamination of underground sources of drinking water, Congress recently enacted amendments to the Safe Drinking Water Act that include a Federal role in groundwater protection that may influence States' activities to protect the resource. The new law creates a program for the establishment of wellhead protection areas in the States. Although it may be premature, concern exists over the potential impact such a program might have.

Congress' interest in groundwater protection has increased in recent years and has focused on oversight of EPA and State efforts to protect the resource. While specific groundwater protection bills have been introduced during recent years, consideration of Federal legislation has been hindered in part by sensitivity to traditional State primacy in this area. During the 99th Congress, however, the House-passed legislation to amend the Safe Drinking Water Act, H.R. 1650, contained provisions for the States to develop groundwater protection programs—an initiative not addressed in the Senate-passed version, S. 124.

The House bill's groundwater provisions were resisted by some Senators, who felt that groundwater legislation—a controversial subject likely to require extensive debate—should be considered separate from the Safe Drinking Water Act amendments. Some Representatives, however, viewed that controversial groundwater protection legislation on its own would have little chance for Senate passage unless it was included in the drinking water bill. The compromise contained in the drinking water amendments was the establishment of a new elective program for State wellhead protection areas.

The program combines concepts in the House bill, to foster State groundwater protection efforts, with a concept of maximum State flexibility, which was particularly sought by Senate conferees. President Reagan signed the amendments to the Safe Drinking Water Act (S. 124, H. Rept. 99-575), including the wellhead protection provisions, into law on June 19, 1986. (P.L. 99-339)

Because of the limited debate on the new wellhead program (it took shape in the conference committee) and limited State experience with similar programs so far, many of the policy questions can only be raised, but not fully answered at this time.

Congressional proponents of this new program have sought to provide initiative for States to accelerate current groundwater protection efforts, while maintaining State primacy. Yet, concern persists over possible conflicts between Federal and State groundwater protection efforts as a result of the wellhead program proposals.

Some States already are in the process of adopting wellhead protection and should be receptive to the offer of Federal assistance. However, other States are concerned about the direction Federal involvement in groundwater protection might take. The ultimate questions are whether wellhead protection will indeed help to protect groundwater sources of drinking water and, because it is an optional program for States to adopt, whether they will take on the added regulatory responsibilities and increased workload for a 50–90 percent reimbursement from a total grant pool of $20 million.

The Concept of Wellhead Protection Areas

As defined by P.L. 99-339, a wellhead protection area is a surface or subsurface area that surrounds an individual water well or wellfield that is used by a public water system. It is designed to incorporate the groundwater or surface water supplies that are likely to be drawn to the well system. The pumping of a well causes a conical "V"-shaped depression in the underlying water table (see Figure 1) that varies as a result of differing geographic and hydrologic conditions. The water within this zone of

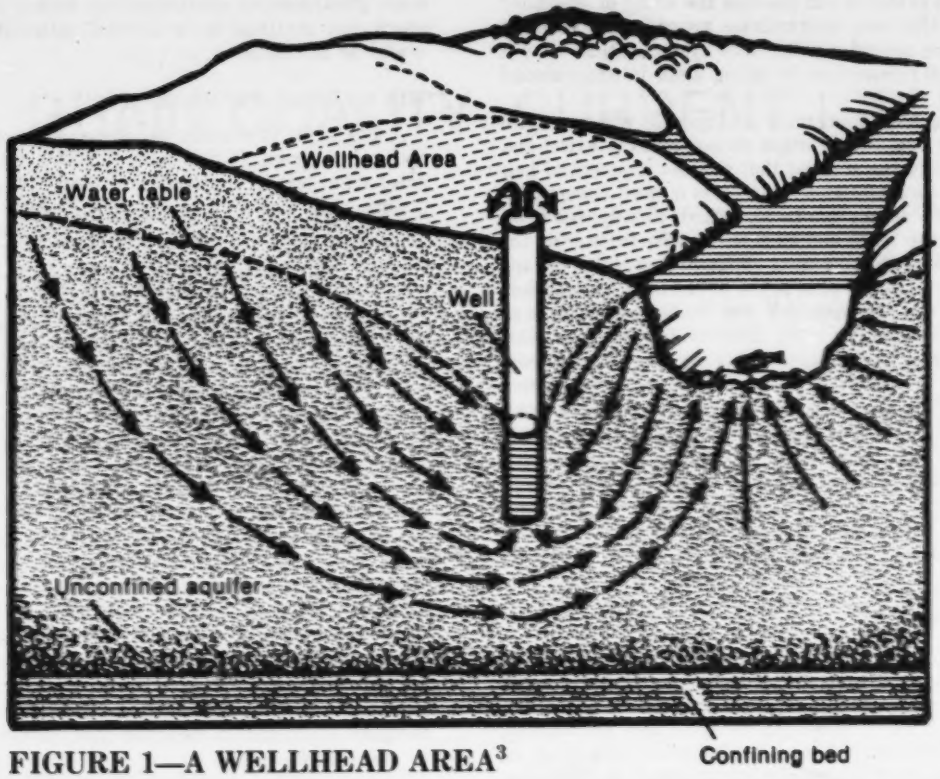


FIGURE 1—A WELLHEAD AREA[3]

depression would be likely to reach the well at some time, and so would any groundwater contaminants within the zone. By restricting surface activities over these zones, protection of the resource is enhanced.

A trained hydrogeologist generally can establish the boundaries of this wellhead zone, which may incorporate nearby surface water supplies (groundwater and surface water supplies interact) and any permeable "recharge" zone where surface waters percolate downward to an aquifer.

Wellhead Protection Requirements in P.L. 99-339

Section 205 of P.L. 99-339 adds a new Section 1428 to the Safe Drinking Water Act for elective State programs to establish wellhead protection areas around public water systems. Under the Act, a "public water system" has a least 15 service connections or regularly serves at least 25 individuals. Each participating State is to submit to EPA a program within 3 years to protect wellhead areas within its jurisdiction from contaminants that may have any adverse effect on public health. The amendments specify items to be included in the State's program, such as potential sources of man-made contaminants; control measures, education, or special projects to protect the area; and contingency plans in the event of contamination.

Each participating State has the responsibility for defining the wellhead protection areas. The intent of Congress, as outlined in the conference report (H. Rept. 99-575), is to afford maximum flexibility to the States in formulating a protection strategy.[4] As such, a State is not required to develop a regulatory program unless it chooses to do so; a program incorporating one or more of the required elements could be determined by a State to achieve the needed protection, according to the conference report. Also, nothing in the new program is intended to authorize the Federal, State, or local governments to regulate any withdrawal, beneficial use, or other existing water rights for groundwaters or surface waters.

EPA's role in the process is to provide technical guidance that States may use to determine the protection areas. The Agency also is to review proposed State wellhead protection programs. Under the amendments, if the EPA Administrator approves a State's program, the State shall receive grants between 50 and 90 percent (determined by the Administrator) for costs incurred in developing and implementing the program. P.L. 99-339 authorizes $20 million in grants annually for FY87 and FY88, and $35 million annually for FY89-FY91.

The EPA Administrator may disapprove a State program if it does not include one or more of the required elements and is not adequate to protect public water systems. However, the Administrator's disapproval authority should be used "judiciously," according to the conference report. The only penalty for failure to have an approved program is that the State would not be eligible for the wellhead protection grant assistance. Thus, the wellhead protection program is largely an elective activity for the States.

Will the Wellhead Program Protect Groundwater Quality?

Wellhead protection seems to be an effective

groundwater management *tool* for selective public water well systems in that it will prevent the siting or operation of activities that may contaminate groundwater within a sensitive area around a public well system. Some view it to be an ideal mechanism for siting wells in undeveloped areas.

Furthermore, the determination process will map local groundwater supplies (if maps do not already exist) and help to identify the sources that present a potential hazard. Should contamination occur, it is a more manageable situation if the source can be identified. Finally, the process will educate State and local authorities further on the importance of protecting their groundwater resources and provide a contingency plan in the event of contamination.

However, the new approach may not be amenable to all well situations and, in turn, State-wide programs. One potential problem pertains to obtaining the data to designate a wellhead protection areas. The law states that each proposed wellhead area plan should be based on "all reasonably available" hydrogeologic information and should identify "all" potential anthropogenic (human-caused) sources of contamination that may have "any" adverse effect on public health. Congressional proponents, however, believe that States already have identified many of the potential contaminants to public water wells. Thus, the intent of the law is that the States should identify potential contaminant sources beyond those already known.

Much like the argument about whether the chicken or the egg came first, a similar issue relates to water wells and nearby existing facilities. If wellhead protection areas are adopted as a preventive tool for protecting groundwater quality, siting of facilities or permitting of activities that may potentially contaminate groundwater may be controlled. If, however, a wellhead protection scheme is adopted for an existing well surrounded by existing facilities and activities, or if a well is proposed for siting within an urbanized area, should the facilities and activities be subject to restrictions or possibly be forced to cease operating?

This latter concern is an important issue for industry and developers. For some States this issue is a major hurdle that must be handled on a case-by-case basis. In some, it may be necessary to "grandfather" in certain existing facilities or activities. For example, Vermont reportedly may exempt most agricultural activities from wellhead protection requirements. The issue was not addressed in the conference report.

Finally, how protective of groundwater will wellhead areas be? Depending on State and local conditions (such as aquifer formations, existing urban development, etc.), wellhead protection might not be practicable; in any case, it should not be viewed as an all-inclusive program because not all groundwater resources in a State would be protected—only those current or potential public well supplies. Also, because some existing activities or facilities may be exempted from wellhead area requirements, some groundwater contamination within the protective zones may continue to be allowed, although in theory it would be minimized.

Will the States Participate?

A key factor is whether the States will participate in an optional program. In this context States are likely to consider whether, in their efforts to protect groundwater quality, they wish to take on a new Federal approach and whether there is adequate Federal grant money to provide incentive.

First, is a new groundwater protection program needed in the States? According to EPA, 73 State agencies in 52 States and territories already are mapping aquifers, 65 agencies are monitoring groundwater quality, and 56 are setting groundwater protection policies, rules, and standards. Every State has conducted some form of groundwater resource assessment, and many have, or are developing, State-wide regulations for land use (especially to protect recharge areas), septic tanks, agricultural contamination control, underground storage tanks, and brine disposal.[5]

Another consideration would be the State's willingness to accept the additional workload. Even though EPA's involvement in the new program is intended to be limited to technical assistance, some State officials contend that State implementation of Federal environmental programs tends to require ever-increasing operational and reporting requirements. Second, the administrative costs beyond those reimbursable through Federal grants for each State to implement a wellhead protecton program must be considered.

Certain political ramifications of wellhead protection may need to be addressed by State officials. One aspect has to do with interacting with local governments during the implementation of the new program. While the Federal Government traditionally has deferred groundwater protection to the States, they have as well deferred or delegated land use regulation to local governments (although some States do regulate local land use). State wellhead protection will establish zones around local wells that will influence what activities or facilities can exist within those zones. Thus, the new program could present a potential for State/local conflict, or aggravate conflict that may already exist between the governmental authorities, and between governmental and private entities (such as business and development groups).

For some State officials, however, the bottom line for adopting the wellhead protection program is money. Some express concern about whether the Federal grant funds would be provided at the expense of other State and local environment grants administered by EPA, which have not increased since 1980. The new wellhead

(Continued page 21)

CARL W. EK

U.S. GRAIN QUALITY: CURRENT ISSUES

There have been many recent press reports charging that the quality of major U.S. export crops—corn, wheat, and soybeans—has deteriorated markedly in the past few years.

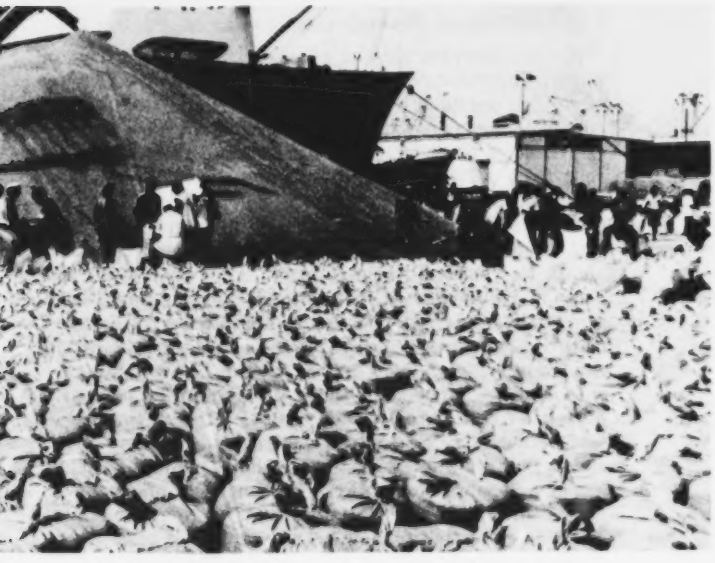
In the eyes of some observers, these claims are borne out by the increasing number of complaints registered by foreign buyers. From 1982 through 1984, the Federal Grain Inspection Service (FGIS)—an arm of the Department of Agriculture (USDA) responsible for monitoring the weight and quality of American grain exports— registered 13, 16, and 24 foreign complaints, respectively. In 1985, that figure leapt to 71 complaints.

This rise in complaints has occurred at the same time that U.S. agricultural exports have experienced a notable decline. In 1981, overseas sales of U.S. farm goods peaked at $43.8 billion; but, with the exception of 1984, exports have fallen annually since then. This year, agricultural exports are expected to decline to $27.5 billion—an 8-year low.

Exports and Quality—Is There a Connection?

Is the increase in complaints purely coincidental with the lag in exports? Some farm groups find a definite correlation between these trends; indeed, they partially attribute the drop in exports to a deterioration in quality. And they lay the blame mainly at the door of the grain traders. Using largely anectdotal evidence, some farmers claim that exporters routinely "water down" the clean grain they buy from farmers by adding damaged grain and non-grain matter.

Industry critics also object to the process called "blending," in which a grain elevator removes dust from grain, and then, while loading, reintroduces it according to contract specifications. During consideration of the 1985 omnibus farm bill, several measures were introduced which would have prohibited this practice.



Finally, many in the U.S. agricultural community criticize what is known as "dockage rounding procedures" (dockage is a term describing foreign matter and inferior kernels contained in a load of wheat). The Official U.S. grain Standards allow dockage to be rounded down to the nearest .49 percent. Under this system, for example, a 1 million bushel shipment of wheat may contain up to 4,900 bushels of dockage, but the inspection certificate will not report any dockage. Many foreign buyers complain that this permits too much dockage to go unreported.

These and other practices, some farmers and Members of Congress contend, have damaged the U.S. image as a reputable supplier, and have caused foreign customers to turn elsewhere for their food and feed grains.

Quality or Price?

Exporters and grain storage groups, however, hotly dispute these charges. They assert that the dropoff in foreign agricultural sales is almost solely attributable to higher U.S. grain prices. They point out that even though there has been a decline in prices received by farmers for major commodities, the strength of the dollar in the first half of the decade has actually made U.S. farm goods much more expensive for overseas buyers.

FGIS Administrator Kenneth Gilles supported this contention recently by pointing out that, due to the dollar's appreciation, U.S. wheat, corn, and soybeans cost respectively 30 percent, 17 percent, and 7 percent more to foreign buyers than the same commodities sold by foreign competition.

Most trade analysts agree with Dr. Gilles' assertion; they note that in a buyer's market such as today's, importers are much more likely to shop around and to register complaints they would not ordinarily make. In addition, grain industry representatives claim that complaints over quality often are used as leverage to extract a lower price. And traders note that from a domestic standpoint, U.S. grain prices are lower than for some time. Since they can buy grain cheaply from the farmer, traders have even less reason to adulterate the product sold abroad, they contend.

Subjecting grain to additional costly cleanings, some conclude, could only result in two equally undesirable things happening: exporters would be compelled to charge higher export prices, thereby making the United States even less competitive internationally; or exporters

Quality of export "deteriorated markedly?" *Library of Congress*

would pay farmers a lower price for grain delivered, thereby lowering farm income.

Other Possible Causes of Complaints

Proponents of the current system also contend that quasi-political motives are sometimes the cause of complaints; they claim, for example, that accusations of low U.S. grain quality have been used as a pretext for foreign buyers to escape from trade agreements.

Grain inspection specialists point out that the variety of international grading standards may sometimes confuse buyers. Different testing equipment and procedures in importing countries also account for inspection discrepancies—American grain exports are sometimes faulted for excess foreign material simply because of international differences in cleaning techniques. For example, U.S. semidwarf wheat, a high-yielding variety, has smaller kernels than Canadian and Australian wheat. Such wheat therefore may fall through sieve holes and be counted against the shipment when the importer cleans American wheat.

Industry analysts also note that technological improvements have provided U.S. exporters with equipment enabling them to load grain closer to contract specifications and official standards—meaning that they need not be as generous as they were in the past.

Exporters remind critics that of all the complaints registered with FGIS, only a handful are, after careful review, deemed to be valid. They also cite extensive FGIS studies indicating that the quality of U.S. export grain generally stands up to official standards.

FGIS—Partly to Blame?

Some observers have suggested that the increase in foreign complaints can be traced to a decline in the level of service provided by FGIS; they attribute this to deep cuts in agency personnel over the past five years. Agency critics point out that FGIS has slashed its employment rolls from 1,778 in 1980 to 739 in 1985—a reduction of nearly 60 percent.

FGIS officials respond that it is specious to suggest that a reduction in personnel has compromised the FGIS's ability to weigh and inspect grain. They note that Congress in 1980—over FGIS objections—exempted inbound grain deliveries from weighing requirements; this in itself reduced the need for many inspectors and weighing supervisors.

In addition, they note that U.S. agricultural exports have fallen considerably since 1981, and that grain inspection activities have declined accordingly. Finally, FGIS claims that reorganization since 1980 has made the agency leaner and more cost-effective. Changes in management have eliminated layers of administration and have increased productivity, they assert.

Canadian Grain—Squeaky Clean, but at What Cost?

Those who believe that a deterioration in the quality of American grain exports is responsible for lost sales sometimes point to Canada as an example of a country which has a reputation for selling clean grain. American grain, they add, could also be better cleaned before it is sold.

Proponents of the current standards admit that Canadian grain is generally cleaner than American grain, but they attribute it to several factors: because of the way in which it is harvested, Canadian wheat initially has more foreign matter than U.S. wheat, a fact which necessitates more thorough cleaning. Moreover, the Canadian wheat marketing system is coordinated by a national wheat board which has adopted a policy of offering wheat cleaner than that of other exporters. Finally, the cost of cleaning is borne by the Canadian producer through a deduction of the final payment he receives from the wheat board after the product is sold. Because additional cleanings constitute additional costs, the U.S. system depends upon agreements between buyer and seller to determine the degree to which wheat and other grains are purified.

Defenders of the current system also contend that the U.S. grain marketing system would not easily lend itself to a grain cleaning requirement such as the Canadians have. Neither the exporter, the country elevator, nor the producer can afford the capital investment for cleaning equipment when foreign competitors are underselling the United States by $25 to $30 per ton. So they argue.

Should Quality be Subsidized?

Some analysts and farm groups have proposed that the grain quality problem be solved indirectly, through subsidies. The problem with the current system, they argue, is that there is no economic incentive for anyone to provide cleaner grain. Moreover, they maintain, any congressionally mandated quality "improvements" are bound to result in lower prices for the farmer and/or higher prices for purchasers, something the United States can ill-afford right now.

A recent background paper by the American Farm Bureau Federation explores the feasibility of instituting an export subsidy program under which exporters would receive payments from the Federal Government for selling grain which surpassed contract quality specifications.

Opponents of export quality subsidies agree that such a proposal might boost business for big trading companies; however, they are skeptical that such a "trickle-down" program would do much for the farmer. Critics of this approach charge that the exporters are already responsible for adulterating grain, and that it would be poor public policy to reward them for doing what they already should be doing.

Grain Quality: Legislation

Will the grain standards and inspection procedures be revised in the near future? The 1985 farm bill takes a step in this direction through commissioning the Office of Technology Assessment (OTA) to study the issue and report its findings by December 1, 1986. The measure requires OTA to:

assess the extent to which grain quality and handling practices are affecting exports;
compare the grain handling technology of the United States with that of other grain exporters;
evaluate the cost effects of enacting a prohibition against reintroducing dust and/or dockage;
evaluate current and new methods for establishing grain classification, including the impact of new seed varieties;
submit additional comments and recommendations.

The proposal calling for an OTA study was supported by the Administration, grain traders, the American Farm Bureau Federation and other agricultural groups.

The farm bill also instructs FGIS and USDA's Agricultural Research Service to cooperate in developing new means of establishing grain classifications taking into account characteristics other than those "visually evident." The conference committee struck a House provision which would have prohibited the reintroduction of dockage or foreign material into grain destined for export channels; the House-Senate panel also deleted a House measure which would have prevented the blending of grains if the difference between the grains being blended exceeded four percent.

Bills prohibiting the reintroduction of dust to grain destined for export have been introduced during this session in both House and Senate. And at least one bill—an omnibus trade measure—would permit the Government to provide federally-owned surplus commodities to exporters agreeing to exceed minimum contract specifications.

The Debate Continues

Some believed that the farm bill provision calling for an OTA study had put the grain quality debate in abeyance for a few months. They may be wrong. With continued media and congressional scrutiny of trading practices and grain standards, the industry has launched a concerted effort to arrive at a concensus on the issue. Some traders privately express a fear that constant harping on the subject of quality may create a perception among buyers that U.S. grain is low-quality grain—despite all evidence to the contrary. Such stereotypes, once formed, are hard to shake, they add.

In January 1986, the North American Export Grain Association began holding a series of monthly meetings on grain quality attended by 40 organizations representing traders, elevators, producers, and processors. The *ad hoc* group hopes to have recommendations in hand by its final meeting this summer. Members of Congress will be invited to attend the last session.

In the meantime, Congress has begun examining the issue more closely. Hearings were held by the Senate Agriculture Subcommittee on Rural Development, Oversight, and Investigations on April 24. A similar hearing by a House Agriculture Committee panel is anticipated.

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DAVID KOITZ

Social Security:

Favorable Projections Raise Fiscal Policy Questions

The financial condition of the social security programs of Old Age, Survivors, and Disability Insurance (OASDI) has improved steadily since Congress enacted major changes to them in 1983. In their latest report, the social security trustees project that favorable conditions will continue for many years. Under their Intermediate II-B forecast—the one cited most often in their reports—excess income would be posted to the social security trust funds until around the year 2030. Deficits would follow, but the buildup of Federal securities in the trust funds arising from the earlier excess income presumably would be sufficient to keep the trust funds solvent until 2051.

Projections of trust fund operations provide a useful gauge of the system's financial well being. However, they do not show something that is often overlooked—how the system's funding affects the Government's finances. Some may ask why there should be any effects. Isn't social security self-financed?

Yes, to a large extent it is, since a separate social security tax is levied upon the Nation's payrolls. However, what is not readily recognized is that excess social security taxes are routinely invested in non-marketable Federal securities—which are posted to the trust funds—but the excess taxes themselves flow into the general treasury and become available for the general use of the Government. Conversely, shortfalls of receipts cause a draw on other Federal resources as the system cashes in its securities. This interaction occurs regardless of how social security is treated in the Federal budget. Thus, unless social security's tax receipts and outgo are regularly balanced, the system's financial flows affect the financial affairs of the rest of the Government in one way or another.

The trustees estimate that the Government will receive large amounts of excess social security revenues through 2017, and that large tax shortfalls thereafter will cause the system to draw on other Government resources. What actually will become of the excess revenues and where the resources will come from to cover the later shortfalls is unknowable. The law requires only that social security receipts be deposited into the general treasury and that the trust funds be given a corresponding amount of IOUs in the form of Federal securities; it does not determine how excess receipts are to be used or how shortfalls are to be covered by the Government.

In summary, from either of these two perspectives—trust fund accounting or governmental cash flow—the OASDI programs are projected to generate sufficient tax receipts to match their commitments through at least the next 30 years. Uncertain, however, is how future excesses and shortfalls of social security taxes will be handled.

The Near-Term Outlook

During the 10-year period, 1974–83, the OASDI trust funds were repeatedly faced with threats of insolvency, forcing Congress to pass remedial legislation in 1977, 1980, 1981, and 1983. Since enactment of the Social Security Amendments of 1983, the trustees' projections have shown steady improvement.

As in other trustees' reports of recent years, the latest report, submitted to Congress on April 1, 1986, contains four separate sets of financial projections. All of them show that the OASDI trust funds would be credited with more than enough income to match the costs recorded against them this year and during the next 5 years.

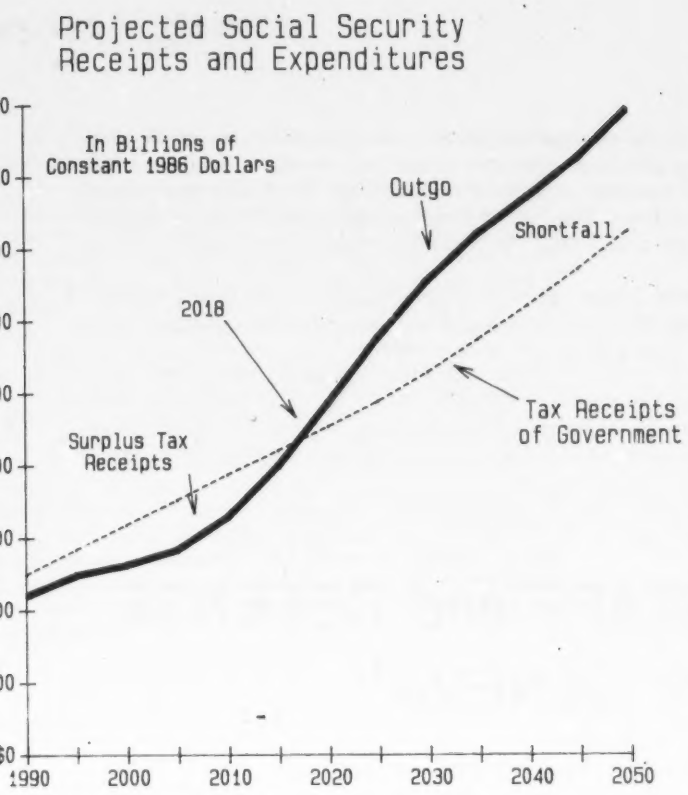
Under the intermediate II-B forecast—the forecast emphasized most by the trustees—$1.65 trillion in Federal securities would be posted to the trust funds during the 1986–91 period and $1.43 trillion in securities would be redeemed. As a result, the balance of securities recorded in the trust fund accounts would rise from $42 billion at the end of 1985 to $248 billion at the end of 1991.

The Longer-Range Outlook

For the longer term, the intermediate II-B forecast shows that on the whole the tax income credited to the system would match 97 percent of the system's costs over the next 75 years. As a result, the trustees deem the system to be in "close acturial balance."

While projected income and outgo are almost balanced in the aggregate, the year-to-year projections show a long period in which income exceeds outgo, followed by an indefinite period in which outgo exceeds income. The shift from surpluses to shortfalls results from projected swings in the system's costs. When shown in terms of how much of the Nation's payrolls would be needed to cover them, projected costs fall by 10 percent between now and 2005 and then rise by 60 percent between 2005 and 2035.

Looked at another way, if the system were financed exclusively by a payroll tax and that tax were to rise and fall in tandem with the system's costs, it would fall from a



level equal to a little over 11 percent of the Nation's payrolls today to just under 10 percent in 2005 and then rise again to almost 16 percent by 2035 (it subsequently would drop slightly and level out at approximately 15.7 percent).

However, social security tax receipts are not expected to parallel the system's future costs. Under current law the social security payroll tax (i.e. the OASDI portion) is scheduled to rise in two steps to a rate of 12.4 percent (employee and employer combined) by 1990, where it will remain. The 12.4 percent rate is considerably more than needed to match projected costs through the year 2016, and when payroll taxes are coupled with governmental credits to the trust funds for interest and income taxes levied on social security benefits, the total income credited to the system is projected to exceed the outgo recorded against it until 2032.

After the year 2032, the system's income would fall short of its costs. However, the surplus of Federal securities posted to the trust funds during the earlier years, which would peak at nearly $13 trillion in 2032 ($2.1 trillion in constant 1986 dollars), would provide the system with IOUs from the Government that it presumably could draw on until 2051. In this year, the system theoretically would become insolvent since its income would be less than its outgo and its securities would have been completely exhausted.

This forecast reflects the potential impact of the post World War II baby-boom generation's retirement and an aging population. During the next two decades, the baby boomers will be in their prime productive years, and the baby-trough generation of the 1930s will be in its retirement years. These two demographic trends would have a stabilizing influence on the ratio of workers to social security recipients, which declined steadily from the program's inception through the late 1970s.

The ratio has since leveled out at a little more than three workers from each recipient and is projected to remain fairly constant until 2010. Coupling this with scheduled increases in the social security tax rate in 1988 and 1990 and a decline in the relative size of benefits, the system's income is projected to exceed its costs by 40 percent over the 1986–2010 period as a whole. However, as the "older" baby boomers reach their early 60s between 2006 and 2010, social security costs are projected to rise substantially. By 2022, people born between 1946 and 1960 would be 62 or older, and most would be receiving social security benefits. The number of workers per recipient would have fallen from 3.2 in 2005 to 2.7 in 2015 and to 2.1 in 2025.

While the system's financial flows would change significantly during the course of the 2011–35 period, on the whole its income is projected to exceed its outgo by 12 percent. Then in the following 25-year period, 2036–60, the shifting to an older population—resulting from continuing increases in longevity and a persistence of less-than-replacement birth rates—would keep the system's costs at the relatively higher level that began with the retirement of the baby boomers. However, the system's income, which would begin a downward trend in relation to the system's outgo around 2010, would continue to fall largely as a result of declining interest "income." In 2033 the system's income would fall below its outgo and would remain so indefinitely thereafter.

Another Perspective: Social Security's Impact on Government Finance

Projections of trust fund operations are not the only means by which to assess the financial affairs of the social security system. How much the Government is projected to receive and spend for social security also is important.

Although frequently perceived as separate financial entities within the Treasury, the social security trust funds do not actually take in or dispense cash nor does the Treasury Department make a practice of engaging in separate transactions on their behalf in open investment markets. Moreover, the Treasury Department does not segregate social security taxes from other taxes that it receives (nor for that matter does it do so for any other form of tax receipts). The trust funds are issued special Federal securities, creating IOUs from one account within the Treasury to another. The balances of securities recorded in the trust funds rise and fall to reflect changes in the resources available to the program and the expenditures the Government makes on their behalf.

In a sense, the balances represent legal limitations on what can be spent for the programs. In an every-day operational sense, the trust funds are a means of accounting for social security taxes that flow into the general treasury and other resources that Congress makes available for the programs. They provide a mechanism that permits the programs to operate without a new financial assessment and congressional appropriation every year. From a longer range perspective, they provide a framework in which estimates can be made of whether the future legal limitations on expenditures for social security (i.e., the projected balances in the trust funds) can be expected to be sufficient to permit the payment of the commitments prescribed in another part of the law.

(Continued page 26)

The United States and the U.S.S.R. are actively engaged in arms control negotiations at Geneva. These Nuclear and Space Talks (NST) cover strategic offensive arms, intermediate-range nuclear forces (INF), and strategic defense and space weapons, and their relationship. Each side also has offered its own plan to eliminate all nuclear weapons. The recent announcement by President Reagan that the United States is no longer bound by the SALT treaties, however, raises many questions as to the direction of the Geneva negotiations.

This article focuses on the current U.S. and Soviet strategic offensive arms reduction proposals and the positions of each side toward space and strategic defenses. The strategic arms reduction talks (START) demonstrate that while there are important areas of convergence, fundamental disagreements must be resolved before an agreement can be signed. The strategic arms reduction talks (START) also raise significant implications for strategic stability and U.S. and Soviet strategic forces and modernization. The positions of the two sides regarding strategic defense and space weapons, however, are mutually exclusive, and progress in this arena is a Soviet precondition to progress toward reducing strategic nuclear weapons.

ARMS CONTROL: START and DEFENSE and SPACE TALKS at GENEVA[1]

THE START TALKS AT GENEVA

U.S. and Soviet START Negotiating Positions

The Soviet Union tabled a comprehensive strategic arms reduction offer on Oct. 1, 1985 (See Table 1). In many respects, it sustains long-standing Soviet goals to:

(1) eliminate U.S. qualitative advantages in advanced military technology, such as long-range cruise missiles, strategic defenses, and the deployment of "new" systems;

(2) count INF in Europe as strategic; and

(3) be compensated for systems that the United States has poised against the Soviets, for which they have nothing comparable poised against the United States, such as forward-based systems (FBS)—fighter aircraft capable of nuclear attack based in Europe and Asia on land and on carriers for the purpose of allied defense.

The Soviet proposal offers deep cuts in nuclear weapons, as they would define them. The Soviets argue that their proposal requires a larger reduction than the U.S. proposal and that their's best serves mutual security. Their offer is conditional, however, upon the United States ending the Strategic Defense Initiative (SDI). On January 15, 1986. Soviet leader Mikhail Gorbachev added to the October 1985 proposal, dramatically offering to eliminate all nuclear weapons by the year 2000 through a series of phased reductions.

The United States responded to the Soviet October 1985 proposal on November 1, 1985 (See Table 1). The U.S. counterproposal reflects enduring U.S. objectives to: (1) reduce the threat faced from the largest and most powerful Soviet ICBMs (SS-18s); (2) reduce Soviet advantages in throw-weight (a measurement of total destructive potential); and (3) restructure Soviet forces toward a more evenly distributed mix of ICBMs, SLBMs, and strategic bombers.

The United States proposes to reduce the number of nuclear weapons by 50 percent, but in a manner that it argues is better and more equitable. U.S. negotiators are guided in Geneva by a policy that seeks to eliminate nuclear weapons over an indeterminate period of time by shifting from reliance on deterrence by offensive nuclear weapons to strategic defenses. The United States has not made a specific START counterproposal to the January 15 Soviet offer to eliminate all nuclear weapons by the year 2000.

Areas of Convergence

There are several issues upon which both sides seem to be converging toward an agreement.

(1) *Each accepts deep near-term reductions.*

Both sides have tabled proposals calling for 50 percent reductions in the nuclear forces of each side, and both sides agreed at last year's summit on "the principle of 50 percent reductions in the nuclear arms of the U.S. and U.S.S.R. appropriately applied." Strong disagreement remains as to what exactly should be counted, but the broad outcome of the 50 percent reductions would result in the same number of strategic warheads on each side (6,000) on a comparable number of strategic nuclear delivery vehicles (about 1,600–1,800, as each counts them).

(2) *Convergence on the permitted number of ICBM warheads.*

The net result of the Soviet proposal is a maximum of 3,600 warheads on ICBMs. The U.S. proposal calls for reducing the number of ICBM warheads to 3,000, which represents a compromise roughly halfway between the earlier U.S. proposed limit of 2,500 ICBM warheads and the current Soviet offer of 3,600.

(3) *Each implicitly proposes to ban new types of heavy ballistic missiles.*

The Soviet ban extends to all new types of nuclear delivery systems, but does not explicitly define a "new" type or a "heavy" missile. (In SALT II, a heavy missile referred to those systems larger than the Soviet SS-19; this includes the 308 Soviet SS-18s and the U.S. Titan II missiles, the latter almost all dismantled. And the U.S. ban explicitly prohibits new types of heavy missiles.

(4) *Growing convergence on some verification issues.*

In recent years, the United States has increased emphasis on negotiating effective means of verifying arms control compliance, calling many times for onsite inspection of Soviet facilities or other intrusive verification procedures in the event of an agreement requiring dismantlement of nuclear weapons. In his January 15, 1986 statement, Gorbachev explicitly acknowledged the need for such inspection procedures to monitor compliance with a deep arms reduction agreement. It remains to be seen how far his offer will be pursued at the negotiations.

Areas of Disagreement and Potential Compromise

There are several important issues upon which the sides disagree.

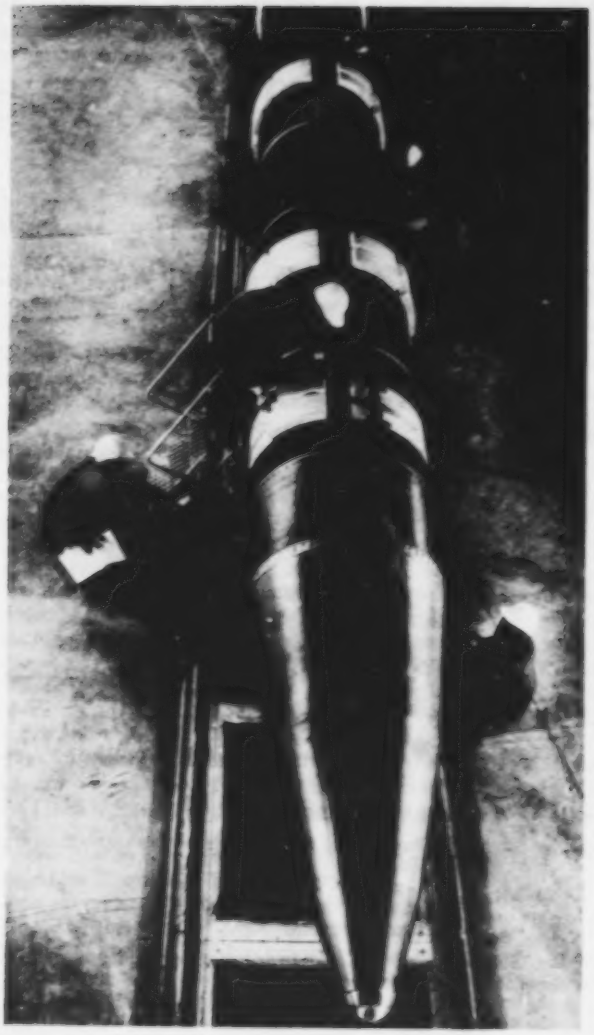
(1) *The Soviet offer is contingent upon the United States abandoning SDI.*

In their formal positions, the Soviets insist upon banning research, development, and deployment of what they refer to as "space-strike arms" as a prerequisite to any deep arms reduction. The Reagan administration contends this would effectively end the SDI and anti-satellite (ASAT) programs, but allow many comparable Soviet anti-ballistic missile (ABM) activities to continue. The Administration insists that the SDI program is being carried out under the terms of the ABM Treaty, and that it will continue to explore the feasibility of strategic defenses. In unofficial settings, the Soviets have implied some flexibility in their position, and recently, have raised some potential areas of compromise at the Geneva talks (e.g., trading Soviet arms reductions for mutual recommitment in the ABM Treaty). Some compromise will have to occur for a deep arms reduction agreement to be signed.

TABLE 1
U.S.-SOVIET STRATEGIC ARMS REDUCTION PROPOSALS

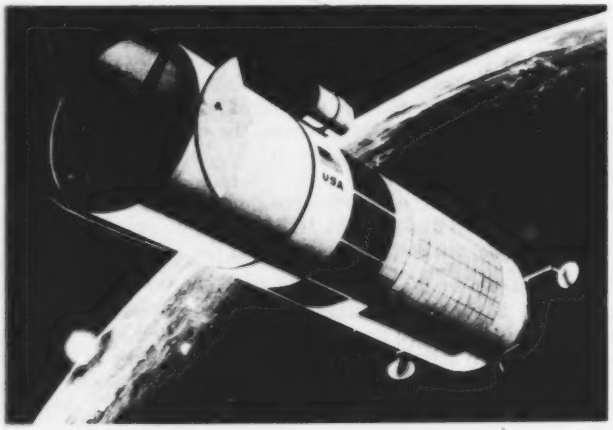
United States	Soviet Union
Launchers	
[U.S. has 1,028 ICBMs, 648 SLBMs, 266 heavy bombers. Total = 1,942 launchers]*	[U.S.S.R. has 1,398 ICBMs, 944 SLBMs, 150 heavy bombers, Total = 2,492 launchers]*
Limit on strategic ballistic missiles	Reduce all systems capable of striking each other's territory by 50% (contingent upon U.S. abandoning SDI program)**
—1,250 to 1,450 for each side (ICBMs and SLBMs)	—1,250 for U.S.S.R. (ICBMs, SLBMs, heavy bombers) —1,680 for U.S. (ICBMs, SLBMs, heavy bombers, INF, FBS)
Limit on heavy bombers (contingent upon Soviets accepting ballistic missile limit)	
—350 total for each side	
Ban new, heavy ICBMs; ban on modernization or replacement of heavy ICBMs	Ban "new" types of strategic systems
Warheads	
[U.S. has 2,107 ICBM and 5,760 SLBM warheads. Total = 7,867]*	[USSR has 6,415 ICBM and 3,008 SLBM warheads. Total = 9,124]*
Reduce strategic ballistic missile warheads	Reduce "nuclear charges"
—4,500 (ICBMs and SLBMs)	—6,000 (ICBMs, SLBMs, cruise missiles, gravity bombs, INF, SRAMs)
—3,000 sublimit on ICBM warheads	—3,600 sublimit on ICBM warheads
—1,500 ALCMs (contingent upon Soviets accepting warhead and throw-weight limits)	—Ban all long-range cruise missiles (more than approx. 375 miles)
Throw-Weight	
50 percent cut in Soviet throw-weight**	No throw-weight limit

*Totals reflect U.S. numbers using SALT II counting rules. Warhead numbers do not include sea-launched cruise missiles, and weapons carried on heavy bombers because of the uncertainty of how many are carried.
**These are approximate percentages.



President Reagan and General Secretary Gorbachev (top) shown at the Geneva Summit, November 1985. (L. to R.) Full-scale model of U.S. Small ICBM (Midgetman); Soviet Bear H strategic bomber; Soviet Delta IV SSBN; U.S. B-1B strategic bomber; artist's conception of a U.S. space-based laser system.

White House and DOD photos



(2) *Major disagreement over aggregation, or what should be counted.*

What is strategic? The Soviet definition counts all nuclear weapons systems capable of striking the territory of the other as "strategic," including attack aircraft based on aircraft carriers and bases in Europe and Asia, and INF as well. The Administration argues that about 1,100 such systems would count against the overall U.S. strategic limit, while none would count against the Soviet limit of about 2,000 comparable Soviet forces (because they can cover Western Europe, but could not hit the territory of the United States).

In contrast, the United States counts only systems that are intercontinental in range (e.g., ICBMs, SLBMs, and long-range bombers). This Soviet approach was taken during the SALT negotiations, but was never accepted by the United States; it was eventually dropped. The Soviets may likely drop this position again in one form or another.

Warheads or Nuclear Charges? A second definitional problem concerns nulcear warheads. The Soviets want both sides to reduce to a level of 6,000 "nuclear charges"—a definition designed to include weapons normally not counted on strategic bombers (because of the near impossibility to verify compliance with a specific number). The Administration counters that such an approach does not distinguish between the most powerful warheads on ICBMs and gravity bombs carried on aircraft. Many argue that there are important distinctions between such weapons, with very different implications for strategic stability. The differences between the U.S. and Soviet positions might be resolved if both sides could agree upon sublimits in various categories of warheads.

(3) *Disagreement over cruise missiles.*

The Soviet Union seeks to ban all long-range cruise missiles. In contrast, the United States is willing to limit only ALCMs (and ground-launched cruise missiles separately as part of an INF agreement.) Some arms control analysts believe that the Soviets will eventually abandon their proposed ban and agree to various cruise missile limits, although both sides would understand that such limits may not be completely verifiable.

(4) *Disagreement over mobile missiles.*

The Reagan administration wants to ban all mobile ICBMs because it believes that their limitations cannot be verified and because the Soviets can more easily deploy mobile ICBMs than the United States. The Soviets, however, appear deeply committed to mobile ICBMs and are currently replacing older ICBMs with mobile systems (i.e., SS-25s are replacing SS-11s). Given the deep and growing Soviet commitment to mobile ICBMs, and congressional support for the U.S. mobile ICBM (Midgetman), a possible compromise position at Geneva would be to ban MIRVed mobile ICBMs and permit single-warhead ones, such as Midgetman and the SS-25.

(5) *Disagreement over the issue of throw-weight.*

Throw-weight is the useful weight that a missile can place on a trajectory toward its target; it is viewed as a measurement of a missile's destructive potential. The U.S. proposal seeks to reduce Soviet throw-weight by half the current Soviet level (which is now about three times the throw-weight of the United States). The Soviets do not believe that throw-weight is a key indicator of strategic potential and have always resisted specific limits on throw-weight. This area of dispute might eventually be resolved indirectly through the proposed 50 percent cuts in launchers and warheads themselves.

Implications for Modernization and Force Structure

(1) *The Soviet Proposal.*

Under this proposal, the Soviets would be able to continue their current modernization and at the same time develop a more survivable strategic force with increased emphasis on their land-based forces. In contrast, the United States would have to curb its modernization of strategic forces sharply, but it could retain the same distribution of forces between ICBMs, SLBMs, and strategic bombers.

(2) *The U.S. Proposal.*

Under its proposal, the United States would likely have to restructure its strategic forces by increasing the relative proportion of strategic bombers, decreasing its nuclear submarines, and it would not be able to modernize its ICBM force with mobile missiles. The Soviets, under the U.S. proposal, would not be able to complete their modernization plans. They would also not be able to modernize their ICBM force the way they now plan, but they would be able to deploy more strategic bombers than currently scheduled.

Implications for Strategic Stability

Strategic stability can be divided analytically into two categories: (1) crisis stability (where neither side fears that the other side would feel compelled to attack first in a crisis) and; (2) arms control stability (where it is unlikely that a sudden change in the strategic balance will occur because of new weapon developments). The two arms control proposals bear examination in terms of their effects on strategic stability.

(1) *The Soviet Proposal.*

The Administration argues that the Soviet proposal fails to get at the heart of U.S. strategic concerns, namely, the threat of a first-strike (crisis instability) posed by Soviet missiles to U.S. ICBMs. At issue is the Soviet position regarding throw-weight and their reluctance to reduce the most significant portion of the Soviet strategic force—the 308 very large and accurate SS-18s. The United States further holds that the Soviet proposal would penalize the U.S. bomber force (by counting all bomber weapons). The Administration views emphasis on bombers as promoting crisis stability because of their slower flight times to reach a target.

(2) *The U.S. Proposal.*

The U.S. proposal seeks to resolve the issue of Soviet throw-weight advantages (and its threat to stability) by restricting the modernization of Soviet SS-18s. The United States also wants to reduce the number of MIRVed systems, which are also viewed by many as a threat to crisis stability (because one MIRVed missile can threaten many missiles). The Administration also wants to ban mobile missiles, which it feels promotes arms con-

(Continued page 29)

JAY R. SHAMPANSKY

Congress' Contempt Power

Congress' contempt power is the means by which Congress responds to certain acts which obstruct the legislative process in order to punish the contemnor and/or to remove the obstruction. Historically individuals have been cited for contempt for a variety of conduct, but today the contempt power is generally employed only in instances of refusals of witnesses to appear before committees, to respond to questions, or to produce documents. Although the 1982 House citation of an executive branch official, Anne Gorsuch Burford, who was then the administrator of the Environmental Protection Agency (EPA), was highly publicized and presented unique legal issues, the contempt power has most often been employed against private individuals.

There are three different kinds of contempt proceedings. Both the House and the Senate may cite a witness for contempt under their inherent contempt power or under a statutory criminal contempt procedure. The Senate also has a third option, a relatively new statutory civil contempt procedure.

Inherent Contempt

The inherent contempt power is not specifically granted by the Constitution, but is considered necessary for Congress to investigate and legislate effectively. Under the inherent contempt power, the individual is brought before the House or Senate by the Sergeant-at-Arms, tried at the bar of the body, and can be imprisoned in the Capitol jail.

The purpose of the imprisonment or other sanction may be either punitive or coercive. Thus, the witness can be imprisoned for a specified period of time as punishment, or for an indefinite period (but not, at least in the case of the House, beyond the end of the Congress) until he agrees to comply. Due process would require that the witness be given notice of the trial and an opportunity to be heard. Prompt judicial review could be obtained by means of a petition for a writ of *habeas corpus*.

The inherent contempt power has not been exercised by either House in over fifty years because it has been considered to be cumbersome and time-consuming for a modern Congress with a heavy legislative workload that would be interrupted by a trial at the bar.

Statutory Criminal Contempt

Recognizing the problems with use of the inherent contempt process, a statutory criminal contempt procedure was enacted in 1857 which, with only minor amendments, is codified today as sections 192 and 194 of Title 2, U.S. Code. Under section 192, a person who has been subpoenaed to testify or produce documents before the House or Senate or a committee and who fails to do so, or who appears but refuses to respond to questions, is guilty of a misdemeanor, punishable by a fine of up to $1,000 and imprisonment for up to one year.

Section 194 establishes the procedure to be followed if the House or Senate wants to refer a witness to the courts for criminal prosecution. A contempt citation must be approved by the subcommittee, the full committee, and the full House or Senate (or by the presiding officer if Congress is not in session). After a contempt has been certified by the President of the Senate or the Speaker, the statute provides that it is the "duty" of the U.S. Attorney to present the matter to the grand jury. If an indictment is returned, the witness is prosecuted as in any other criminal case.

The criminal contempt procedure is punitive in nature. It is not coercive because a witness generally will not be able to purge himself by testifying or supplying subpoenaed documents after he has been voted in contempt by the committee and the House or Senate.

Statutory Civil Contempt

As an alternative to both the inherent contempt power of each House and criminal contempt, in 1978 Congress enacted a civil contempt procedure which is applicable only to the Senate.[1] Upon application of the Senate, the federal district court will issue an order to a person refusing, or

threatening to refuse, to comply with a Senate subpoena. If the individual still refuses to comply, he may be tried by the court in summary proceedings for contempt of court, with sanctions being imposed to coerce his compliance.

Civil contempt might be employed when the Senate is more concerned with securing compliance with a subpoena or with clarifying legal issues than with punishing the witness. Civil contempt can be more expeditious than a criminal proceeding and it also provides an element of flexibility, allowing the subpoenaed party to test his legal defenses in court without necessarily risking a criminal prosecution.

Statutory and Constitutional Limits

While upholding the authority of Congress to investigate and to cite a witness for contempt, the courts have also established limits, rooted both in the language of the criminal contempt statute and in the Constitution, on the investigatory and contempt powers. Pursuant to the statute, the courts have ruled that an individual cannot be held in contempt if the committee was not clearly authorized by its parent body to conduct the investigation or if the subject of the investigation was outside the scope of the committee's jurisdiction.

Additionally, there must have been a legislative purpose for the investigation or it must have been conducted pursuant to some other constitutional power of the Congress. Also, the question which the witness refused to answer must have been pertinent to the committee's investigation, and the witness' refusal to answer or to produce documents must have been willful.

There are also constitutional limits on Congress' investigatory powers. The Supreme Court has held that the first amendment may be asserted in response to questioning by a committee, but that it does not give a witness an absolute right to refuse to respond to congressional demands for information. Where first amendment rights are claimed, the Court will balance the personal interest in privacy against the congressional need for the information.[2]

The fourth amendment's prohibition against unreasonable searches and seizures is applicable to congressional committees.[3] It appears that probable cause must exist for the issuance of a congressional subpoena. The fourth amendment also protects a congressional witness against a subpoena which is unreasonably broad or burdensome. The application of the exclusionary rule to congressional committees is in some doubt and will depend on the precise facts of the situation.

The Court has indicated that the privilege against self-incrimination afforded by the fifth amendment is available to a witness in a congressional investigation.[4] Where a witness asserts this privilege, the full House or the committee conducting the investigation may seek a court order which (a) directs the witness to testify and (b) grants him immunity against the use of his testimony, or other evidence derived from his testimony, in a subsequent criminal prosecution.[5]

The Burford Contempt

In 1982, EPA Administrator Burford became the first head of an executive department or agency to be held in contempt by the full House or Senate. Acting pursuant to a claim of executive privilege by President Reagan, Burford refused to provide a House Public Works and Transportation subcommittee certain documents related to EPA's enforcement of the Superfund legislation, and she was cited for contempt by the subcommittee, the full committee, and the House of Representatives.

Following the contempt vote by the House, the U.S. Attorney, relying on the doctrine of prosecutorial discretion, did not present the matter to the grand jury. Instead of instituting criminal proceedings against Burford, the U.S. Attorney joined an action brought by the Justice Department against the House, seeking a declaratory judgment that Burford's conduct was legal. Following a policy of judicial restraint, the court dismissed the case and urged the parties to reach a negotiated settlement.[6]

An agreement was eventually reached providing for congressional access to the EPA documents under terms designed to protect the confidentiality of those which the executive branch considered to be sensitive. After the agreement was implemented, the House adopted a resolution which stated that criminal prosecution of Burford would not be required.

The Burford matter vividly illustrated a serious problem for congressional investigating committees. When an executive branch official refuses to comply with a subpoena and the dispute cannot be resolved by negotiation and compromise, none of the three types of contempt proceedings is completely satisfactory. The new statutory civil contempt procedure is inapplicable in the case of a subpoena to an executive branch official. Inherent contempt has been described as "unseemly" and cumbersome. And if the criminal contempt method is utilized, the U.S. Attorney, who is an executive branch appointee, might not seek an indictment.

Alternatives

Several alternatives are available to Congress when confronted by a recalcitrant executive branch official.

(1) The contemnor can be cited for criminal contempt, and be prosecuted by an independent counsel, rather than by the U.S. Attorney.

(2) The committee can seek declaratory or other relief in the courts.

(3) The appropriations for the agency or department involved can be cut off or reduced.

(4) In an exceptional case, the official might be impeached.

(5) The committee and the executive branch can attempt to compromise with regard to the materials to be made available to the committee and the conditions applicable to the disclosure.

For additional information, see "Congress' Contempt Power," CRS report no. 86–83A, Feb. 28, 1986, by Jay R. Shampansky.

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[1] 2 U.S.C. §§288b(b) and 288d, 28 U.S.C. § 1364.

[2] *Barenblatt* v. *United States*, 360 U.S. 109, 126 (1959).

[3] *Watkins* v. *United States*, 354 U.S. 178 (1957).

[4] *Id.* (dicta).

[5] 18 U.S.C. §§6002, 6005.

[6] *United States* v. *House of Representatives*, 556 F. Supp. 150 (D.D.C. 1983).

WELLHEAD PROTECTION: ADDITIONAL READINGS

The 1986 wellhead protection law introduces new opportunities for Federal and State involvement in groundwater protection, and it raises questions that have long been discussed in environmental literature. What management strategies will safeguard our water resources? Who is responsible for a clean, abundant water supply? These issues are discussed in the following excerpts, selected from CRS databases.

HOW CAN GROUNDWATER BE PROTECTED?

"Because many communities depend heavily on groundwater, careful management is necessary to avoid serious water supply problems. The full range of groundwater problems found in the United States can also be found in the Midwest. These include problems of groundwater supply as well as groundwater contamination. The types of problems and their occurrence are illustrated by the following examples.

> Shallow private wells in the rural settlement of Atlanta, Michigan, were contaminated by gasoline leaking from underground storage tanks. A new public water supply system is being constructed to replace the contaminated private wells . . .
>
> Hazardous waste disposal sites have contaminated private wells in a number of communities including Winnebago County, Illinois; Marion County, Indiana; and Ottawa County, Michigan.
>
> Poorly sited septic systems, dumping in sinkholes, landfilling of solid waste, and runoff from agriculture and urban sites threaten an aquifer in southeastern Minnesota."

DiNovo, Frank, and Martin Jaffe. Local groundwater protection: Midwest region. Chicago, American Planning Association, 1984. 327 p.

This report is intended to help communities in the Midwest improve their planning and use land control procedures to protect groundwater resources, and it includes examples of existing programs that illustrate management alternatives. The appendices provide technical information on groundwater hydrology and contaminants.

"Unlike air and surface water, groundwater cannot cleanse itself. Pollutants may be physically, chemically or biologically changed to harmless substances as water percolates from the surface 'recharge zone' down through various soils to the aquifer. However, most toxic chemicals remain in the water. Little, if any, additional cleansing takes place after contaminants reach the cool, dark, slow-moving acquifer. Once contaminated, groundwater can remain so for thousands of years."

"There are three basic alternative protection goals: First, protect groundwater at its existing quality. Second, protect groundwater at a specific water quality level. Third, distinguish among aquifers or groundwater regions on the basis of their quality, use, vulnerability to contamination or other considerations, and then set levels of protection associated with each type of groundwater."

Bird, Judy Campbell. Groundwater protection: emerging issues and policy challenges. Washington, Environmental and Energy Institute, 1985. 42 p.

This report includes descriptions of specific groundwater protection techniques: waste reduction, recycling, and treatment; groundwater quality standards; effluent limitations and discharge permits; best management practices; controls on groundwater users; land use alternatives; incentives and disincentives; technical assistance and training; public education programs.

Wellhead from page 8

protection program represents another competing interest for limited funds, and as States are forced to set priorities, new programs are candidates for exclusion, particularly if their functions can be absorbed into more established programs.

In view of the congressional intent to reduce the Federal deficit, it is likely that any new Federal grant program will receive a critical review. In spite of authorizations of $20–$35 million over the next 5 years, Congress may choose not to appropriate monies at or near these funding levels.

Should grant funds for wellhead protection be approved, it is likely that many States will apply for assistance. The public support for groundwater protection is growing, and most States have recognized the importance of protecting the resource. For those States with active groundwater protection programs, wellhead protection may be a relatively simple program to adopt since these States likely already have substantial information on aquifer mapping and groundwater quality assessment.

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See also CRS Report no. 86-687 ENR, Wellhead Protection: The New Federal Role in Groundwater Protection.

[1]See IB86079, Groundwater Contamination and Protection.

[2]U.S. Environmental Protection Agency. Ground-Water Protection Strategy. Office of Ground-Water Protection, August 1984, Washington, 1984. 70 p.

[3]New York State Department of Environmental Conservation. Draft Upstate New York Groundwater Management Program. Division of Water. January 1984. Albany, 1985. p. IV-15.3.

[4]U.S. Congress. Conference Committees, 1986. Safe Drinking Water Act Amendments of 1986. Conference Report to accompany S. 124. House Report No. 99-575, 99th Cong., 2d Sess. Washington, U.S. Govt. Print. Off., 1986. p. 47.

[5]U.S. Environmental Protection Agency. Overview of State Ground-Water Protection Summaries; Volume 1. Office of Ground-Water Protection, March 1985. Washington, 1985. pp. 15–20.

"To obtain sufficient quantities of good water, engineers [in 19th century Britain] usually sought surface supplies that were relatively free from the effects of human activities. Impounded reservoirs were constructed in upland areas in what the English quaintly called 'upland gathering grounds' which were diligently protected from potential polluting sources."

"In addition to restrictions on land use in the 'gathering grounds,' a second line of defense for surface water adopted by water engineers was treatment. At this time, groundwater is not generally treated before its use. For those urban and suburban areas that do not have the option to limit existing land-use activities, it seems that treatment would be a prudent step. It should be recognized that the sophisticated and advanced treatment which this step would require is a last resort, however. The removal of very low levels of micro-pollutants requires a technology that is expensive to install and operate. Prevention of contamination in the first place is more secure than curing it after its occurrence."

Porter, Keith. Protecting the gathering grounds: secure groundwater depends on sound land use. American land forum magazine, v. 6, spring 1986: 50–53. [LRS86-3353]

"Growing concern about groundwater quality and quantity can affect developers in a number of ways. Actual groundwater problems or potential concerns may limit the types of development that can occur, oblige developers to incorporate special groundwater protection measures in their programs, and expose them to increased liability."

"While technological advances in groundwater management continue to broaden the realm of choice in withdrawals, conservation, cleanup, and water treatment, prevention remains far less costly and more effective than action taken after a problem has emerged. Thus, prevention is likely to be the focus of new protection programs at all levels of government, with a practical stress on controlling potential sources of contamination and safeguarding aquifer recharge areas."

Metzger, Philip C., Edwin H. Clark II, and Geraldine Bachman. The developer's stake in groundwater protection. Urban land, v. 45, Apr. 1986: 19–23. [LRS86-2862]

WHO IS RESPONSIBLE FOR GROUNDWATER PROTECTION?

"The nation as a whole is in the midst of a wrenching, fundamental shift in its approach to water problems in which the easy answers have given way to complex questions. Part of the stimulus for change is the price tag. 'No matter how you phrase it, there's the question of cost,' said Edwin H. Clark II, a senior associate of the Conservation Foundation. 'There's no more cheap water available. It is more expensive to get the supply and more expensive to clean it up."

"The new realities of water quality and quantity are forcing new institutional relationships on federal, state and local governments and the quasigovernment bodies that pump, cleanse, distribute and use water. The need to put water problems in a larger perspective makes single-minded bureaucrats reach out to others in search of broader solutions. And fiscal constraints and the impracticality of national solutions are creating a new, less dominant role for the federal government."

Stanfield, Rochelle L. Enough and clean enough? National journal, v. 17, Aug. 8, 1985: 1876–1887. [LRS85-7389]

"It is apparent that ground water [sic] issues and conditions vary from state to state and reflect differences in their physical, social, and political makeup. As a result, no single strategy for dealing with ground water pollution problems can be recommended for all states or areas. Each state or local strategy will necessarily reflect the local situation."

"States should consider regulatory and economic incentives for [hazardous waste] source reduction by industry, government, commercial interests, and the public. States should also consider a variety of financial assistance programs to encourage waste reduction by industry, such as low interest or no interest government loans for capital cost of new equipment or environmental audits to determine the best way of reducing waste generation; tax reductions or credits; grants or other aid to encourage smaller firms to pool resources and implement a joint waste reduction strategy; government subsidies to firms actively working on new methods of reducing wastes; financial assistance to waste exchanges to encourage more recycling and reuse of materials that might otherwise be disposed of on the land or into ground water."

"It is extremely inefficient for each state to fund all scientific data collection and research needed for effective ground water programs. The federal role appears to be inadequate in both magnitude and expertise in the following areas: (a) determining the health effects of ground water contaminants and establishing drinking water standards; (b) research on source reduction, control methods, and contaminant transport; (c) technology transfer, and (d) exchange of information among states."

Ground water quality protection: state and local strategies, by the Committee on Ground Water Quality Protection, Water Science and Technology Board, Commission on Physical Sciences, Mathematics, and Resources, National Research Council. Washington, National Academy Press, 1986. 296 p.

This report includes case studies of state and local groundwater strategies. The committee classified protection program approaches into five major categories: information collection and management systems, classification systems, groundwater quality standards, control of contamination sources, and implementation of groundwater protection programs. Recommendations are presented on each of these topics.

"In the last decade, ground-water [sic] contamination has emerged as a major problem throughout the country. State and local agencies, which have the primary responsibility for protecting ground water, are in various stages of developing and implementing policies, statutes, and strategies to meet their particular needs. In August 1984, the U.S. Environmental Protection Agency released the EPA Ground-Water Protection Strategy. Among other things, the strategy commits EPA to assisting states in building the institutional capability they need to protect their ground-water. This report is part of that effort. It presents information EPA compiled from available sources on the basic elements of ground-water programs and activities in the fifty states and selected territories. It is not a comprehensive summary of all state ground-water programs."

U.S. Environmental Protection Agency. Office of Ground-water Protection. Overview of State ground-water program summaries. Washington, The Agency, 1985. 2 v. (ca. 68, 700 p. in various pagings) [LRS85-7282]

Volume I discusses the use and contamination of groundwater and provides an overview of State policies and strategies. Volume II, titled "State Ground-Water Program Summaries" presents the background information on each state compiled by EPA and used in preparing Volume I. Both volumes include summary tables on groundwater use and quality, a list of EPA Regional Groundwater Representatives, and a list of State officials who verified information.

JENNIFER D. WILLIAMS

The U.S. HISPANIC POPULATION in the 1980s

INTRODUCTION

Hispanics are an ethnic group whose members may be of any race. They trace their origins or ancestries to Spanish-speaking countries and the Commonwealth of Puerto Rico. Over 14.6 million Hispanics, including 8.7 million Mexicans, 2.0 million Puerto Ricans[1], 806,223 Cubans, and 3.1 million other Hispanics, were enumerated by the U.S. Bureau of the Census in 1980. The enumeration included an unknown number of Hispanics who are illegal immigrants and omitted an undetermined number of additional illegals.

In 1980, Hispanics accounted for 6.4 percent of the U.S. population. However, according to projections by one demographic research organization, the rapidly growing Hispanic population could account for 8.9 percent to 10.8 percent of the U.S. population by the year 2000. The lower projection assumes net annual immigration to the United States of 500,000 persons; the higher projection assumes a net annual immigration figure of a million persons.[2]

This article highlights certain demographic differences between the Hispanic and U.S. populations, between the Hispanic and non-Hispanic populations in the United States, and among Hispanic subgroups.

Geographic Distribution

Hispanics are found in every State, including Alaska and Hawaii, but their distribution is uneven. California contains the most Hispanics, 4.5 million,

(Continued next page)

"Usually it is human activities which pose the greatest threat to ground-water [sic]. Abandoned mines and landfills, leaking underground gasoline storage tanks, agricultural pesticide and fertilizer use, faulty septic systems, road salting—all of these are potential sources of ground-water pollution. Some of these activities are regulated by the state and federal governments, but there may be gaps in the coverage.... Sometimes state and local powers overlap, as in the authority to set standards for a certain activity. This can be confusing—it is not always clear whether a local government can set a stricter standard than the state. But by using the powers they do have, local governments can play an important role in protecting the ground-water resource.

Typically local programs for ground-water protection involve both regulatory and non-regulatory approaches. Regulatory tools that have been used include zoning and subdivision regulations, permits for certain facilities, and an integrated approach to controlling land uses in sensitive areas. Nonregulatory approaches include public information and education programs, and coordination with individuals and organizations to voluntarily adopt best management practices."

Potter, Juliana. Local ground-water protection: a sampler of approaches used by local governments. Madison, Wis., Geological and Natural History Survey, University of Wisconsin-Extension, 1984. 17 p. (Miscellaneous paper no. 84-2 [LRS84-16712]

"We propose a new environmental partnership to pursue the goal of groundwater protection.... The nature of the resource dictates that states must bear the primary responsibility for its management, with local governments bearing a major responsibility for program implementation. The proper role of the federal government is to assure consistency and equity among the states by stimulating state and local action, and to provide technical support and oversight.

However, the demands of groundwater protection require that we recognize the critical roles of two other partners. The private sector should assume the tasks of reducing the generation of wastes through process modification, resource recovery or recycling, or materials substitution and of undertaking research into improved technology for hazardous waste neutralization. Environmental organizations and other public interest groups should educate the general public about the nature of the groundwater problem and assure responsive actions by appropriate parties. State and federal laws must be enacted to define the goal of groundwater protection and to authorize and fund the necessary strategies to achieve that goal. If the nation is to fulfill its duty to assure that future generations have adequate supplies of uncontaminated groundwater, it must act forcefully, and act now."

National Groundwater Policy Forum. Groundwater: saving the unseen resource: proposed conclusions and recommendations. Sponsored by the Conservation Foundation in cooperation with the National Governors Association. Washington, Conservation Foundation, 1985. 27 p.

—Rebecca Mazur
Environmental and Natural Resources Policy Bibliographer
Library Services Division

A DEMOGRAPHIC OVERVIEW

(from page 23)

while Vermont has the fewest, 3,377. Slightly more than half of all Hispanics (51.5 percent) are located in just two States, California and Texas. These States also contain almost three-quarters of the mexican population (73.3 percent). An additional tenth (9.6 percent) of Mexicans live in Arizona, New Mexico and Colorado.

Nearly half of Puerto Ricans (48.8 percent) are located in New York, and another 12.1 percent live in New Jersey. Cubans are heavily concentrated in Florida. In excess of half of them (58.2 percent) live there, and another third (32.3 percent) are located in New Jersey, New York, California, Illinois, and Texas. Other Hispanics, being a diverse subgroup, are more dispersed than Mexicans, Puerto Ricans, or Cubans. Nevertheless, California and New York account for 42.8 percent of the other Hispanic population, while New Mexico, Florida, Texas, and New Jersey contain over a quarter (26.4 percent) of this population.[3]

Age Structure

Hispanics as an aggregate, and all except one Hispanic subgroup, are younger than the U.S. population. The median age of the U.S. population is 30.4 years, compared with 23.7 years for Hispanics. Mexicans and Puerto Ricans, whose median age is about 22 years, are the youngest Hispanics, while Cubans are the oldest. Their median age (38.1 years) exceeds that of any other Hispanic subgroup and of the U.S. population. The proportions of Mexicans and Puerto Ricans under age 16 are twice the proportion of Cubans in this age category (36.7 percent, 35.7 percent, and 17.1 percent, respectively).[4]

Fertility

In 1981, non-Hispanics had a birth rate (number of live births per 1,000 persons) of 15.2, compared with 24.1 for Hispanics. The fertility rates (a fertility rate being the number of live births per 1,000 women 15 through 44 years old) of the two populations were 65.0 for non-Hispanics and 97.5 for Hispanics. Among Hispanic subgroups, Mexicans and Cubans were at opposite extremes of fertility. Mexicans had the highest birth and fertility rates (26.9 and 112.3, respectively), but the Cubans' birth rate of 10.9 and fertility rate of 47.2 were lower than the rates for non-Hispanics.

Cubans were also the only Hispanic subgroup with a lower proportion of births to unmarried women than the proportion for non-Hispanics in 1981. A fifth of non-Hispanic births, a quarter of the births in the Hispanic population, and roughly half of Puerto Rican births occurred among unmarried women, whereas 14.3 percent of Cuban births were in this category.[5]

Education

Hispanics in general, and Hispanic subgroups, have less educational attainment than the U.S. population on average. The median numbers of school years completed by the U.S. and Hispanic populations, aged 25 years and older, are 12.5 and 11.0, respectively. Over two-thirds of U.S. adults (69.7 percent), but fewer than half of Hispanic adults (45.9 percent), are high school graduates, and there is a substantial difference in the proportions of the two populations who have attended college for at least a year (32.1 percent of the U.S. population versus 18.7 percent of Hispanics).

Mexicans have the lowest median number of school years completed (9.9) and the lowest proportion of high school graduates (40.8 percent); however, the proportion of Puerto Ricans with high school degrees (42.2 percent) is only slightly higher. The median number of school years completed by Cubans, Central or South Americans, and other Hispanics (12.3) is about the same as the median for the U.S. population, and high school graduates constitute a higher proportion of this subgroup (58.0 percent) than of Mexicans or Puerto Ricans.

The educational attainment of younger Hispanic adults, aged 25 through 34 years, exceeds that of older adults. More than half of each Hispanic subgroup 25 through 34 years old are high school graduates. The range is from 52.8 percent for Mexicans to 73.6 percent for Cubans, Central or South Americans, and other Hispanics.

However, the gap in education, especially college education, between the U.S. and Hispanic populations tends to widen at the younger ages. While 85.6 percent of the U.S. population aged 25 through 34 years have high school degrees, the comparable figure for Hispanics is 58.3 percent, and the proportion of the U.S. population with some college education is almost double the proportion of Hispanics who have attended college (44.9 percent versus 23.8 percent). In only one measure of educational attainment has the gap narrowed between the U.S. and Hispanic populations aged 25 through 34 years: the median number of school years completed by Hispanics, 12.2, approaches the U.S. median of 12.9.[6]

Occupations

Hispanics are much less likely than all U.S. civilian workers to be at the upper end of the occupational scale and much more likely to be lesser skilled nontransport operatives (machine operators, including assemblers, dressmakers, garage workers, packers, sewing-machine operators, etc.). Professional and technical workers account for 17.2 percent of employed persons in the United States, almost double the proportion for Hispanic workers (8.8 percent). Nearly 12.0 percent of U.S. workers, but just 6.3 percent of employed Hispanics, are managers and administrators. In contrast, while a tenth of all U.S. workers are nontransport operatives, a fifth of employed Hispanics are so classified.

SOCIAL SECURITY: FUTURE FUNDING PROJECTIONS AND RELATED ISSUES

Social security's financial health has improved markedly over the past four years. The system's trustees recently estimated that favorable conditions will continue long into the future and concluded that the system is in "close acturial balance." Questions linger, however, about what social security's good financial health means for the general financing of the Government as a whole, and whether or not the retirement of the post World War II baby-boom generation will cause a strain on Government and other retirement systems early in the next century. The following excerpts from recent articles and reports highlight the funding and other economic issues raised by the favorable social security projections and the broader demographic trends that affect the Nation's retirement programs generally.

PAST PROJECTIONS AND FUTURE FINANCING CONCERNS

GAO "reviews past and current projections for the social security system and the economic and demographic assumptions, adopted by the Board of Trustees, that underlie the projections."

"Throughout the mid-1970s and early 1980s, the social security retirement system faced continuing financial difficulties. The 1983 Amendments to the Social Security Act were intended to restore the system's financial health, both in the short run and in the long run. While the Amendments have alleviated the short-run problems, concern about the system's long-term financing is beginning to focus on the implications of current projections, which show the buildup of substantial reserves in the trust fund starting in the 1990s .... If the buildup actually occurs, however, it is unclear what effect it will have on national savings and future economic growth. This will depend on how the reserve funds are used or 'invested', which in turn will be determined largely by whether the non-social security portion of the budget is balanced or in deficit."

"Other issues a proposed reserve accumulation raises concern: possible negative economic effects of increased payroll taxes

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Among Hispanic subgroups, Mexicans are the most statistically underrepresented in professional and technical occupations (6.8 percent), have a low proportion of managers and administrators (5.9 percent), and have the highest proportion of farm laborers (4.7 percent, compared with 0.2 percent or less for the other subgroups).

Puerto Ricans have the lowest proportion of managers and administrators (3.9 percent); nor are they much better represented than Mexicans in professional and technical occupations (8.6 percent). Like Mexicans and Cubans, a fifth of Puerto Rican workers are nontransport operatives.

Cubans, followed by Central or South Americans and other Hispanics, have the greatest representation in the professional and technical category (15.2 percent and 12.7 percent, respectively). The proportion of Cubans approaches that of U.S. workers in this category.

Central or South Americans and other Hispanics are statistically overrepresented in service occupations (child care, cleaning, cosmetology, food service, protective service, etc.). About 21.0 percent of this subgroup, compared with 13.8 percent of employed persons in the United States, are service workers.[7]

Unemployment

The 1984 average annual unemployment rate in the Hispanic labor force was over 40.0 percent higher than in the U.S. labor force (10.6 percent versus 7.5 percent). (The labor force consists of employed persons and persons who are unemployed, but seeking work.) Unemployment rates ranged from 13.3 percent for Puerto Ricans to 7.9 percent for Cubans, the latter rate differing little from that in the U.S. labor force.[8]

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See also CRS Report 86–536 Gov. Selected Demographic Characteristics of the U.S. Hispanic Population and of Hispanic Subgroups. Feb. 10, 1986. 85 p.

[1]Throughout this article, the term "Puerto Ricans" refers to persons living in the 50 States and the District of Columbia, not in Puerto Rico.

[2]Davis, Cary, Carl Haub, and JoAnne Willette. U.S. Hispanics: Changing the Face of America. Washington, D.C., Population Reference Bureau, 1983. p. 39.

[3]U.S. Dept. of Commerce. Bureau of the Census. Data User Services Division. Census of Population and Housing, 1980. Summary Tape Files (STF) 3D, 3H. Washington, D.C., Bureau of the Census, 1982.

[4]U.S. Dept. of Commerce. Bureau of the Census. Current Population Report P–20, no. 396. Persons of Spanish Origin in the United States: March 1982. Washington, D.C., U.S. Govt. Print. Off., 1985. p. 12.

[5]Ventura, Stephanie J. Births of Hispanic Parentage, 1981. NCHS Monthly Vital Statistics Report. v. 33, no. 8, supplement, Dec. 11, 1984. p. 8, 10.

[6]Data for the U.S. population are from U.S. Dept. of Commerce. Bureau of the Census. Current Population Report P-20, no. 390. Educational Attainment in the United States: March 1981 and 1980. Washington, D.C., U.S. Govt. Print. Off., 1984. p. 27. Data for Hispanics are from U.S. Dept. of Commerce. Bureau of the Census. Current Population Report P-20, no. 396. Persons of Spanish Origin in the United States: March 1982. Washington, D.C., U.S. Govt. Print. Off., 1985. p. 16.

[7]U.S. Dept. of Commerce. Bureau of the Census. Current Population Report P-20, no. 396. Persons of Spanish Origin in the United States: March 1982. Washington, D.C., U.S. Govt. Print. Off., 1985. p. 24.

[8]U.S. Dept. of Labor. Bureau of Labor Statistics. Employment and Earnings. v. 32, no. 1, Jan. 1985. p. 198–199.

in the short run; debt management and monetary policy issues in the long run; and the appropriateness of using a rate of payroll taxation that is higher than required to pay current benefits, as a vehicle to increase national saving. Because of these and other issues, some economists have proposed returning social security to pay-as-you-go financing with a substantial contingency reserve. This would be achieved by modifying the currently scheduled payroll tax increases. However, action to lessen the reserve accumulation could move the system away from long-run actuarial balance and leave future financing issues unresolved."

U.S. General Accounting Office. Social security: past projections and future financing concerns: report to congressional requesters. Mar. 1986. Washington, G.A.O., 1986. 99 p.
"GAO/HRD–86–22"

SOCIAL SECURITY, MEDICARE AND THE UNIFIED BUDGET

"This report provides a short history of the inclusion of social security and Medicare in the unified budget. It explains the various ways in which these programs affect the budget and financial operations of the Government, and how they affect and are affected by the Federal debt and debt ceiling. It shows what effect those programs have had on the budget since it was unified in FY 1969, and what overall effect they had on the financial affairs of the Government from 1937 to 1984. It also contains CBO projections of the financial effects on a de-unified budget if measures were enacted to remove these programs from the budget beginning in FY 1986. Finally, it summarizes the ... arguments for and against such actions."

Social security, Medicare and the unified budget: a report prepared by the Congressional Research Service for the Committee on the Budget, United States Senate. Washington, G.P.O., 1985. 112 p. (Report, Senate, 99th Congress, 1st session, S. Prt. 99-83) LRS85-9520

Social Security from page 13

However, an assessment of trust fund operations does not portray what the Government actually collects and expends for the programs. If social security income and outgo consisted only of receipts from the public and payments to the public, they would be identical to the income and outgo of the trust funds recorded through the issuance and liquidation of securities. Moreover, if there were no significant surpluses and shortfalls of social security income projected for the future, there would be little utility in assessing the system's impact on Government finance, since it would be more or less obvious that what was collected for the programs was regularly spent for them. Under these circumstances, the budget deficits or surpluses the Government incurred through its other activities would neither be increased nor reduced by the excesses or shortfalls of social security receipts.

But neither of these circumstances exists. Some of the income credited to the trust funds does not arise from tax receipts from the public. About 4 percent today (larger amounts in the future) comes from interest, payroll taxes the Government pays as an employer, and other "internal" Treasury transactions. And the taxes the Government takes in for the programs are not expected to parallel the payments it makes for them. Receipts are projected to exceed expenditures from now through the year 2017, after which expenditures would exceed receipts. From this perspective the system can be viewed as being overfinanced for the next 30 years, and underfinanced thereafter.

If excess social security taxes collected in the coming decades were to be used exclusively to reduce the amount the Government borrowed from the public, future interest expenditures of the Government would be reduced. And it could be contended that this savings would partially offset future social security expenditures. If one assumed that what the Government would save was roughly equal to the interest projected to be earned by the trust funds, the system could be expected to generate more governmental receipts than expenditures until around the year 2030. And the later liquidation of the system's securities (caused by the shortfalls of tax receipts) could be viewed as simply the "paying off" of debt that the Government would have incurred to someone else if the earlier excess social security receipts had not been available. Under this scenario, social security's financial flows neither would have augmented nor strained the Government's general resources.

The difficulty, however, in drawing this conclusion is that it is impossible to say what ultimate use the excess social security taxes will be put to in the coming decades—i.e., whether they will cause less borrowing from other sources, higher Government spending for other activities, lower taxes than would otherwise occur, or some combination of these effects. The law says only that social security taxes are to be invested in Federal securities, not how they ultimately are to be used in the process of fiscal policymaking.

Thus, from the standpoint of overall Government financing, it is unclear how excess social security taxes would be used by the Government over the next 30 years, and how later shortfalls would be covered.

The Uncertainty of the Estimates

How much credence should one give to these projections?

If one wants strong assurances, not much.

If one would settle for some "helpful" insight, perhaps more.

The trustees' projections represent a sophisticated attempt to meld together a lot of assumptions about future economic and demographic events based on past and current trends so that some sort of statement can be made about whether the system's resources and expenditures can be expected to be aligned. How closely the projections match actual experience will depend on how accurate the assumptions are, and how they fit together. The projections do not provide certainty. Their utility is that they provide something with which to guide policymaking so that decisions do not have to be made in a vacuum or only after adverse or favorable events have occurred.

See also *CRS report entitled "Social Security: Its Funding Outlook and Significance for Government Finance," Report no. 86-674 EPW, June 1, 1986.*

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PAYROLL POLITICS

"Recently, a handful of leading politicians in both parties have begun talking about the [social security] system from a different angle—focusing not on retirement benefits but on the payroll tax that finances them.... The lines of argument now being developed suggest that increasingly, the social security debate may be framed in terms of promoting economic growth and of fairness—not to the elderly but to today's workers, particularly lower-income workers."

"Two developments are fueling these first flickers of interest in the payroll tax. First is the nastier sting of the tax itself. The tax rate paid by employees and employers alike has increased from 4.2 per cent of earnings in 1966 to 7.15 per cent today.... The second factor is the large surplus accumulating in the social security trust funds. The system's trustees expect the annual surplus, which stands at about $14.4 billion in fiscal 1987, to rise to about $50 billion in fiscal 1990 and $94 billion five years later."

"In effect, the trust funds are being swelled today to pay for the retirement of the baby boom generation. Although the acturial soundness of that strategy generates complex arguments, one point is clear: A pot of money that large is going to attract attention."

Arguments have been put forth "that Congress should cut the payroll tax rather than allowing the surpluses to accumulate."

(Continued next page)

"SMALL FARMS—Do they have a role in U.S. Agriculture?" will be subject of an article by Jeffrey Zinn in a future CRS REVIEW.

It has also been suggested that all social security benefits should be used to keep down—or even roll back—the payroll tax.

Brownstein, Ronald. Payroll politics. National journal, v. 18, May 10, 1986: 1145.

TOO MUCH, TOO SOON?

"Thirty years from now, the social security old age, survivors and disability trust funds will have reserves of $7 trillion, says the system's chief actuary, Harry C. Ballantyne."

"If social security remains in the unified federal budget, as it will until 1992 if current law is not changed, the growing annual surpluses could reduce pressure on Congress to attack the government's deficits .... Even if removed from the budget, social security's current schedule of tax increases and trust fund accumulations strikes some as inequitable and economically problematic. Today's workers are paying much higher taxes than those of just a decade ago, and paying at a higher rate than needed to finance their own retirement benefits."

"In the long run, the more important issue is what to do about the high reserves social security is now scheduled to accumulate." A question is "whether it is fair to ask today's workers to finance their children's retirement."

Clark, Timothy B. Too much, too soon? National journal, v. 17, Sept. 21, 1985: 2172.

WHO WILL PAY?

"Not all analysts predict financial catastrophe from these demographic shifts [aging of the baby boom generation, increasing life expectancy, and a decreasing working generation]. Some say that projected surpluses in social security trust funds, which will begin to build in the late 1980s due to other demographic trends and recent legislative reforms, can be saved up for the worst years of the work force-retiree imbalance. Even if the surplus isn't large enough to cover the demographic crunch, some analysts say that social security should not be tampered with until there is stronger evidence that baby bust workers won't be able to support baby boom retirees."

"Prescriptions for the future health of social security ... vary according to the diagnosis ... including raising the eligibility age for full retirement benefits and limiting the cost-of-living increases for those with higher incomes."

Kosterlitz, Julie. Who will pay? National journal, v. 18, Mar. 8, 1986: 570-574. LRS86-1152

JUSTICE BETWEEN GENERATIONS

"The challenge for members of the baby boom generation will be not how to meet the demands of their parents but how to provide for their own retirement without putting an impossible economic burden on their children."

"The baby boom generation's long-term interests will be served best by policies that promote capital formation and productive investment. In the short term, the implementation of such policies would oblige baby boomers to rediscover the ethos of thrift."

"There are many ways to organize such an effort.... Whatever strategy is adopted, there must still be generous public provision for the elderly poor. It does not take much political savvy to realize that an entitlement program based on need runs a much greater risk of being killed or inadequately funded than does one that distributes benefits to all classes. But as we have seen, providing benefits to the old regardless of need is bound to impose an intolerable burden on the young—principally because there will be so many old people to support in the next century."

"Giving to each according to his circumstances rather than his age seems the fairest principle. Such a policy may encourage some people to be spendthrifts, but if we provide a strong incentive to save for retirement, the problem should be manageable. As currently written, the tax code rewards large borrowers, by allowing full deductions of interest payments, and discourages most forms of saving. Given the baby boom generation's long-term need for capital formation, this is a perverse arrangement."

Longman, Philip. Justice between generations. Atlantic monthly, v. 225, June 1985: 73–81. LRS85-4759

CAN WE AFFORD TO RETIRE?

"Some experts say public confidence in the [social security] retirement system is eroding, that young people doubt they will ever be repaid the lifelong investment regularly subtracted from their payroll checks. The fear is that wavering confidence could translate into resentment, even conflict, between generations of retirees whose futures add up differently—especially if the economy were to hit hard times. And that, they say, could be a loose thread that pulls apart the social fabric of a nation quickly growing older."

The future financial situation for social security is looked at: "the ratio of workers to retirees will drop as the brunt of the baby-boomers moves into retirement. The prospect of raising taxes and lowering benefits, coupled with declining birth rates and lengthening life spans, means fewer future workers around to pay more into the retirement system for more retirees."

Social security is not in "imminent danger"; advocates that individuals develop supplemental retirement alternatives, such as investing in IRAs and taking advantage of 401k tax-deferred savings plans when offered by employers.

Oldenburg, Don. Can we afford to retire? Washington post, May 22, 1986: C5.

Marsha Cerny
Senior Bibliographer, Education and Public Welfare
Library Services Division

Arms Control from page 18

trol stability because they cannot be fully verified; they are especially destabilizing if they are MIRVed, it is argued.

But overall, the U.S. proposal may actually serve to increase crisis instability because of the proposed ban on mobile ICBMs (this would affect mobile Midgetman, which is viewed by many as strengthening crisis stability) while the vulnerability of MX and Minuteman ICBM is increased by continued allowance of MIRVed systems in the two positions.

Congressional Issues

Key issues of congressional concern can be summarized as questions:

To what degree should Congress support the President and his position at Geneva and seek to avoid undermining that position?

How might an agreement ensure strategic stability?

How should Congress deal with SDI in the context of the Geneva negotiations?

How could current budget constraints facing the Congress affect the Geneva Talks?

How does Congress address the issue of Soviet arms control compliance?

THE DEFENSE AND SPACE TALKS AT GENEVA

U.S. and Soviet Negotiating Positions and Rationales

Table 2 compares the current positions of the two sides at Geneva on strategic defense and space weapons. As they now stand, the positions taken are mutually exclusive and neither side appears anxious to compromise. The Soviet Union argues that if SDI research continues, then the talks will fail (this includes the strategic arms reduction talks); arms control progress is possible only if the SDI program is constrained. In contrast, the Reagan administration appears deeply committed to the SDI program. It is uncertain whether the stalemate can be broken.

At the Geneva talks on space and defense weapons, the Reagan administration seeks the following objectives:

(1) to explain U.S. SDI objectives and why strategic defenses are necessary;

(2) to discuss ABM Treaty compliance and raise charges of Soviet violations; and

(3) to discuss Soviet SDI programs and objectives.

Meanwhile, the Soviet objective appears to be to seek a total ban on the development, testing and deployment of "space-strike arms," a phrase generally believed to refer to SDI-type activities, especially thouse that might be space-based, and the U.S. ASAT program.

Alternative Explanations for the Negotiating Positions

United States. One alternative explanation of the U.S. position, which may not necessarily be incompatible with the official U.S. rationale, is that the United States is interested only in negotiating an agreement on INF and strategic forces, and is not at all interested in constraining the SDI program. A second possible explanation is that the Administration is not seriously interested in arms control at this time (this has become a more prominent argument in the wake of the President's decision to abandon the SALT treaties). The purposes of the talks, it is argued, is to focus allied and domestic attention on charges of Soviet treaty violations and draw attention to Soviet strategic defense programs to win support for the SDI program. A third possibility is that the U.S. position is a tactical negotiating stance, where compromise on SDI will be offered only when the Soviets make major concessions on their central strategic systems (e.g., SS-18 and SS-19 ICBMs).

Soviet Union. Some maintain that the Soviets are at Geneva only as a charade; they are using the talks to promote a peaceful world image and are using SDI as a convenient reason to deadlock the talks, placing the onus on the United States and exacerbating strains in the NATO alliance. Others contend that Gorbachev needs a continued U.S. SDI program for his own political reasons; SDI is not an immediate short-term danger, but it represents a looming, long-term threat that can be used by the Soviet leader to justify moderate defense spending while spurring advanced scientific and technological development in the U.S.S.R. A third alternative is that the Soviets desire superiority over the United States and are exploiting the talks to stall for time as they prepare to deploy a nation-wide ABM defense.

Finally, the Soviets might genuinely want to ban space

TABLE 2

U.S.-SOVIET POSITIONS ON SPACE AND DEFENSE WEAPONS

United States	Soviet Union
Strategic Defenses	
Continue research on SDI program in keeping with the ABM Treaty; seek with USSR a cooperative transition toward a defense-reliant regime, should SDI technologies prove cost-effective at the margin and survivable; share SDI technologies with allies and later with USSR.	Ban development, testing, and deployment of "space-strike arms"; suspend all work on "space-strike arms"; recommit to ABM Treaty; stop work on Krasnoyarsk radar if U.S. stops work on two radars in England and Greenland.
Anti-Satellite (ASAT) Weapons	
An ASAT agreement or an ASAT testing moratorium is not in the U.S. interest and presents verification problems.	The United States should join with the USSR in the Soviet ASAT moratorium and agree to ban "space-strike arms," including ASATs
Verification	
Open laboratories to monitor strategic defense research programs.	Open laboratories to monitor a ban on "space-strike arms."
Arms Control Linkage	
Progress in strategic arms reduction talks can proceed independently of space and defense talks.	Progress in strategic arms reduction linked to progress in space and defense talks.

JEC REPORT ON CHINA

CHINA'S ECONOMY LOOKS TOWARD THE YEAR 2000: VOLUME 1, THE FOUR MODERNIZATIONS, and VOLUME 2, ECONOMIC OPENNESS IN MODERNIZING CHINA. Released by the Joint Economic Committee, June 29, 1986 [Can be obtained from the GPO, 50-553-0 and 50-554-0]. The report is a compilation of papers by 50 top American experts on China and the Chinese economy edited by the Joint Economic Committee with the assistance of CRS.

China is becoming involved in the international economy at an unprecedented rate, opening its economy in a fashion unparalleled by any other Communist country's development. Seeking to become a major trader in the Pacific, China has set a goal of tripling its trade with the United States. Moreover, China supplies modest economic aid and influence throughout the Third World, projecting its role as the largest socialist developing nation.

Under the leadership of Deng Xiaoping, China is on a course of ambitious modernization of the economy. In the initial stages, especially in the late 1970s when readjustment and retrenchment were required, the program of modernization and its targets for the end of the century seemed neither credible nor attainable. However, with rural reform initiated in 1979, urban reform announced in 1984, and the 1985 science and technology reforms to more closely link research with economic requirements, the Chinese are now following a consistent pattern of improved performance--a trend that could bring them close to the overall targets by the year 2000.

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weapons and are concerned about the SDI program for several reasons:

(1) SDI might weaken their deterrent relationship with the United States;

(2) SDI could transform the strategic relationship altogether;

(3) SDI technologies could be applied to the conventional weapons arena; and

(4) Soviet eagerness to avoid a new and costly arms race with the United States.

Prospects for the Future

Considerable uncertainty remains, for several reasons, over the future of the talks. First, what impact will the President's decision that the United States is no longer bound by the SALT treaties have on the Geneva negotiations? Second, will the Soviets continue to insist upon linking strategic arms reductions to the space and defense talks? Finally, is either side willing to compromise in its position on space and defense weapons?

Potential Areas of Compromise

Assuming that both sides sincerely want an agreement, there will have to be some form of compromise. As illustrations, that compromise might take one or more of the following forms:

modifying the ABM Treaty in various ways. For example, extending the required notification time before withdrawal; resolution of arms control problems posed by dual-capable technologies—ASAT weapons, surface-to-air weapons, large phased-array radars; expanding the permitted number of ABM systems and restrict them to terminal defense missions; reach a common understanding of permissible research and testing of new ABM technologies; and clarifying ambiguous term sin the ABM Treaty;

agreeing to deep cuts in Soviet central strategic systems. For example, cutting Soviet SS-18 and SS-19 ICBMs, which are at the heart of ongoing U.S. strategic worries; there is considerable interest in strategic defenses as one method of reducing the threat of these systems to U.S. ICBMs; or

resolving U.S. concerns over Soviet SDI activities. For example, clearing up the U.S. charge of ABM Treaty violation by the Krasnoyarsk radar facility; scaling down the Soviet air defenses; and clarifying the objectives of the Soviet laser program.

Congressional Issues

The major issues of congressional concern are as follows:

To what degree should Congress support the Administration's request for funding the SDI program in 1987 and how might that affect the conduct of the negotiations at Geneva?

Does a continued congressional imposed ban on ASAT testing serve the purposes of arms control at Geneva?

What role might Congress play regarding the future of the ABM Treaty?

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[1]This article is based on "Arms Control: The Geneva Arms Control Talks," CRS IB85157; "Arms Control: The Strategic Arms Control Talks at Geneva," CRS IB86051; and "Arms Control: Defense and Space Talks at Geneva," CRS IB 86073.

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CRS QUARTERLY ECONOMIC BRIEFING. This will be the second of the Quarterly Economic Outlook Briefings for 1986. These briefings focus on the current status of the economic expansion, employment, interest rates, the balance of payments, the federal budget, and the prospects for the coming twelve months. A question and discussion period will follow. 9:00 a.m. to 10:30 a.m., Pickford Theatre, 3rd floor, James Madison Building, The Library of Congress. Gail Makinen, Cordinator.

July 31

ESPIONAGE, LEAKS, AND PROTECTING GOVERNMENT INFORMATION: ISSUES AND PROBLEMS IN PREVENTING UNAUTHORIZED DISCLOSURES. Recent arrests, prosecutions, and "leaks" have raised concerns about the Government's ability to protect its information against unauthorized disclosure. This seminar will examine the major issues and problems in protecting classified information as well as the recent efforts by the administration and Congress to improve such security. 9:00 a.m. to 11:30 a.m., West Dining Room, 6th floor, James Madison Building, The Library of Congress. Coordinator, Fred Kaiser.

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Geneva—See articles on arms talks at this picturesque Swiss city, on pages 2 and 14. In foreground, Mont Blanc Bridge and Jean-Jacques Rousseau Island. St. Pierre Cathedral dominates background.

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PENELOPE C. CATE

UPCOMING WORLD TRADE TALKS:

An agenda and starting date for a new round of multilateral trade negotiations (MTNs) to revise the General Agreement on Tariffs and Trade (GATT) is expected to be set this September in Punta del Este, Uruguay, at a meeting of trade ministers of member countries. The actual negotiations will likely begin in early 1987. As it has since the establishment of GATT in 1947, the United States has taken the lead in calling for a new round of MTNs. Agricultural issues will be prominently featured in this new round, largely at the insistence of the United States, which has seen its farm exports drop 37 percent over the past six year. (*See Box*) At the September ministerial meeting the United States is expected to propose "fast track" negotiations on agricultural trade issues with the objective of completing them in 2 to 3 years, rather than the 4 to 10 years likely to be needed for other GATT matters.

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Joseph E. Ross, *Director*,
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WHAT'S at STAKE for U.S. AGRICULTURE

What is the GATT?

The GATT is a document of rights and obligations that individual sovereign nations have agreed to observe in conducting world trade. Since the United States and 22 other countries signed the GATT in 1947, its membership has grown to include 92 contracting parties, 31 countries that apply it *de facto*, and one country that has acceded to it provisionally. Although these countries account for nearly 90 percent of world trade, a number of significant players in trade remain outside the GATT, most notably the Soviet Union. China is also a nonmember, but has announced its intention to join.

In addition to a code of principles and rules for the conduct of international trade, the GATT provides a framework for consultation, dispute settlement, and negotiation on trade issues arising among its contracting parties.

A common misunderstanding of the GATT is that it has the power to enforce its rules. In fact, it has no enforcement mechanisms and at best performs a mediating role in world trade. All decision-making bodies of the GATT are composed of representatives of contracting parties, and decisions are made on a consensus basis. The need to reach agreement among all concerned members is often difficult but has been perceived by members as necessary since most countries, including the United States, are unwilling to cede control over national trade policies to an international body.

The GATT is an evolutionary product which represents a commitment on the part of its signatories to a *progressive* liberalization of world trade within the multilateral context. The GATT recognizes the incremental nature of trade liberalization and thus also serves as a forum for multilateral trade negotiations to revise or expand the principles contained in the General Agreement.

Negotiations under the GATT are carried out in ses-

GATT TALKS: NOT A PANACEA FOR U.S. FARM EXPORTS

From a peak of $43.8 billion in FY 1981, U.S. farm exports are expected to drop to $27.5 billion this year, the lowest level since 1978. With imports remaining relatively steady or rising slightly, the declines in agricultural exports have significantly cut into what had been a healthy agricultural trade surplus—exports exceeding imports annually by over $10 billion between 1974 and 1985, and in some years, more than twice that amount.

The agricultural trade surplus for FY 1986 is forecast at $7.5 billion, the lowest level since 1973. And, in a more startling development, the Commerce Department recently reported that farm imports (valued on CIF-basis) exceeded farm exports by some $348.7 million in May, the first *monthly* agricultural trade deficit since August 1971. The United States has been running an annual trade deficit in processed food products since 1983.

These declines have had a number of serious repercussions throughout the U.S. economy. Since farmers look to the export market to take production from more than one-third of their cropland, falling exports have resulted in significant declines in farm income and farm employment—it is often estimated that for every $1 billion drop in export sales, some 35,000 agricultural jobs are lost, as many as 60,000 non-farm jobs are lost for every $1 billion decline. And for every $1 lost in agricultural export activity, an additional $1 or more worth of supported business activity is foregone.

Several factors have contributed to the decline in U.S. farm exports:

abundant food supplies worldwide;
relatively weak demand due to global recession and large debt loads of importing countries;
keen price competition among exporters, including new competitors, to increase market shares or capture new foreign commercial markets;
a strong dollar which made U.S. commodities more expensive to foreign purchasers; and
domestic farm programs which, in effect, increased the price of U.S. farm products.

Although steps have been taken to bring down the dollar's value and farm programs have been revised, the effect of these measures has not yet been reflected in increased agricultural export levels. At the same time competition to boost sagging export levels has intensified, deteriorating world economic conditions have fueled protectionism worldwide, placing severe stress on trade relations.

GATT can do little to solve the underlying problem of world excess capacity in agriculture competing for stagnant markets. It can, however, mediate disputes that arise from this intense competition and develop rules which limit "unfair" trading practices that benefit one country, or a group of countries, to the exclusion of others.

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sions, termed "rounds," that often last several years. There have been seven of these rounds since GATT's inception, the last of which ended in 1979 (the Tokyo Round, 1973–79). New rounds are generally prompted by a desire or perceived need to broaden or clarify prevailing GATT rules. The eighth round scheduled this fal is no exception, particularly in the area of agricultural trade.

Congress' Role in the Upcoming Round

Although the Administration, through an interagency process, sets the agenda and objectives for the United States and does the actual negotiating, Congress retains a powerful voice in MTN rounds.

Before the United States can fully participate in a new round of MTNs, Congress must grant authority to the President, and through him to negotiators headed by the U.S. Trade Representative (USTR), to negotiate both tariff and nontariff barriers to trade. Congress began delegating authority to the President to negotiate and proclaim reductions in tariffs under the Reciprocal Trade Agreements Act of 1934.

This authority has always been subject to specific congressionally mandated conditions and limitations. Congress last gave the President basic tariff negotiating authority in the Trade Act of 1974 and extended this authority through January 2, 1980. Congress also authorized the President to negotiate nontariff barriers and extended this authority to January 2, 1988.

Congress must grant similar authority to the President for U.S. participation in the upcoming round. Several bills granting that authority are currently pending before Congress. However, many of these bills contain a variety of other trade provisions that the Administration does not support. The Administration reportedly will wait until after the November elections to request legislation authorizing U.S. participation in the new round in the hope that protectionist sentiment in the Congress will have dissipated.

Whereas tariff concessions granted in a MTN have become effective for the United States by Presidential proclamation alone, and have not needed specific congressional approval, nontariff barrier agreements become U.S. law only if implementing legislation is passed by Congress and signed by the President. This requirement imposes some limitations on U.S. negotiators, who must remember that review and final approval of agreements negotiated in the GATT rests with the U.S. Congress.

Agriculture and the GATT

Critics have charged that, up to now, agriculture has been largely ignored or inadequately dealt with under the GATT. They contend that as these inadequacies have become more and more evident over the past few years, confidence in the entire GATT system has been eroded. Unresolved agricultural trade issues, such as export subsidies and quantitative import restrictions, have become critical sources of conflict among the United States and

Cranes flying over a rice field in Louisiana.
Library of Congress

its trading partners, notably the European community and Japan, as global economic recession and worldwide surpluses of agricultural commodities have fueled protectionist pressures and intensified competition for stagnant world markets.

By most accounts, GATT has been relatively successful in dismantling tariff barriers to trade, including those applied to agriculture, because it has traditionally focused its attention on this area. But, because of this focus on tariffs, GATT has been more successful in liberalizing trade in industrial products which have been more widely protected through tariffs than have agricultural products.

The relative lack of success in removing trade barriers in agriculture is due largely to:

(1) special provisions for ariculture in the GATT;

(2) widespread use of *nontariff* barriers—such as voluntary export restraint agreements, variable levies, and quotas—in agriculture and the difficulties in negotiating their removal; and

(3) the strong links between individual nations' domestic agricultural policies and trade.

These issues, along with the GATT dispute settlement process itself, are critical areas for attention in the new round. Most trade analysts agree that progress in these areas, particularly in dealing with the trade effects of domestic agricultural policies, is essential for GATT to continue as a viable mechanism for facilitating world agricultural trade. However, they also tend to be somewhat pessimistic about the outcome of the new round, given the difficulties inherent in addressing sovereign domestic agricultural policies within a multilateral context.

Agriculture's Special Status

There are two major exceptions to the basic GATT principles, allowing export subsidies and quantitative restrictions in agricultural trade, that give agriculture a special status under GATT. This special treatment of agriculture in the GATT essentially reflects the domestic agricultural policies of most member countries, including the United States, which are designed, in part, to protect farmers from adverse effects of free market forces.

These exemptions for agriculture are contrary to the basic GATT goal of trade liberalization in that they continue to provide a precedent for other members to use restrictive measures to protect their agricultural sectors. They also provide countries with a rationale for pursuing domestic policies which may adversely affect the trade of others.

First, Article XVI contains a general prohibition against the use of export subsidies. However, it only dissuades member countries from subsidizing exports of primary (nonprocessed) products, whether agricultural or nonagricultural, enjoining the GATT participants to commit themselves to "seek to avoid" the use of export subsidies on these products. Moreover, if contracting parties do apply export subsidies on primary products, they should do so in a manner that will not give them "more than an equitable share of world export trade" in the products concerned.

What constitutes an "equitable share", however, is not defined precisely in GATT rules. This special treatment has led to numerous trade disputes within the GATT and is currently the most contentious agricultural trade issue between the United States and the European Community.

Second, Article XI of the General Agreement contains a general prohibition on the use of quantitative restrictions, such as quotas, by the contracting parties. There are, however, three exceptions to this general prohibition that relate to agriculture, the most important of which permits import restriction agricultural or fisheries products where such restrictions are necessary to the enforcement of domestic marketing or production restriction programs or for the removal of temporary surpluses.

In addition to this general exception to Article XI, in 1955 the United States was granted a special waiver of its obligations under Article XI (as well as Article II concerning the non-discriminatory application of concessions) to reconcile provisions in domestic law with its international obligations under GATT.

The United States requested the waiver because of a 1951 amendment to its "Section 22" import relief law which required that no trade agreement could be applied in a manner inconsistent with Section 22's requirements. Section 22 authorized the President to impose fees or quotas on imported agricultural commodities that render ineffective or materially interfere with the operation of any U.S. Department of Agriculture domestic commodity program whether or not it included production or marketing controls. This now famous waiver, which effectively permits the United States to apply unilaterally quantitative restrictions on a wide range of agricultural products, further highlights the special status of agriculture in the GATT.

The United States and other GATT members have stressed the need to bring agriculture more fully under

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DAVID C HUCKABEE

The "VOTES-SEATS" GAP in the CONGRESS:

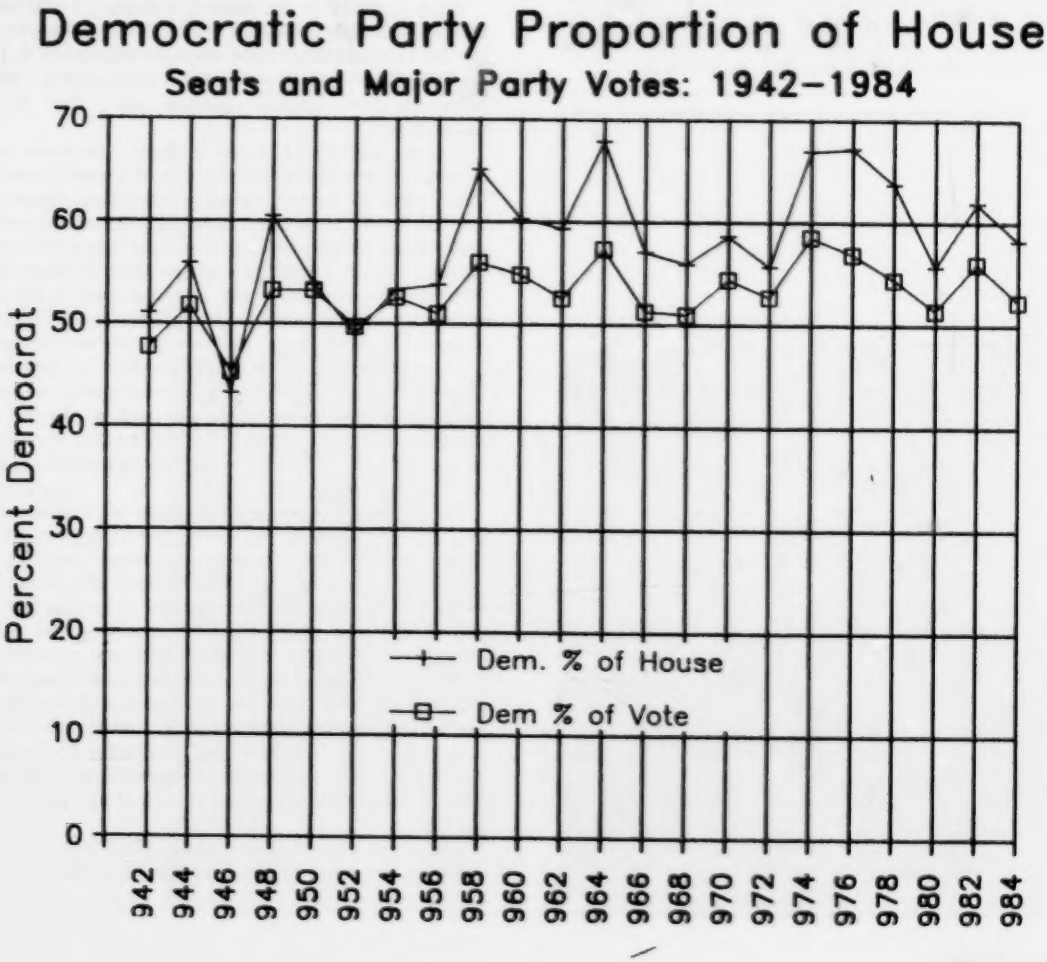
In the wake of the 1984 election, there were media reports that the Republican Party received nearly 50 percent of the total vote cast for House races, while capturing only 42 percent of the seats in the House.[1] This discrepancy was asserted to constitute evidence of successful gerrymandering[2] by the Democrats.[3] At issue is whether "votes-seats" gaps in elections are sound evidence of gerrymandering and whether there ought to be a high correlation between the votes received by a party and its share of seats.

Davis v. Bandemer

This question is all the more relevant today because the Supreme Court decided on June 30, 1986, that political gerrymandering issues are justiciable.[4] But it did not establish a "test" to identify gerrymandering such as evaluating the gap between votes received and seats obtained in the legislature or some other measure. The case, *Davis v. Bandemer*, involved the Indiana legislature where the Democrats alleged that the Republicans gerrymandered the State House of Representatives, thereby causing the Democrats, who received 51.9 percent of the votes for the House, to capture only 43 percent of the seats.[5]

EVIDENCE of GERRYMANDERING?

The Supreme Court ruled that although political gerrymandering was justiciable, the evidence presented to the district court about the Indiana legislative districts was not sufficient to prove that they were unconstitutional because the plaintiffs rel[ied] on a single election to prove unconstitutional discrimination [which] is



unsatisfactory."[6] Although a majority of the justices did not endorse a numerical standard to determine when gerrymandering had occurred, Justice White, writing for the plurality, defined political gerrymandering in the following way: "unconstitutional discrimination occurs only when the electoral system is arranged in a manner that will consistently degrade a voter's or a group of voters' influence on the political process as a whole."[7]

Justice White's opinion reiterated the Court's position against mandating strict proportional representation saying, "our cases, however, clearly foreclose any claim that the Constitution requires proportional representation or that legislatures in reapportioning must draw district lines to come as near as possible to allocating seats to the contending parties in proportion to what their anticipated statewide vote will be."[8] Later, in his opinion for the plurality, however, Justice White adds, "we do not believe that there has been an unconstitutional discrimination against members of that party unless the redistricting does in fact disadvantage it at the polls."[9]

Justice White's opinion:

(1) explains political gerrymandering;

(2) asserts that the Court is not endorsing proportional representation;

(3) but states that unconstitutional discrimination against a party occurs only when "redistricting does in fact disadvantage it at the polls."[10]

The decision presents a significant problem to districting officials because there are no rules to guide their decision-making. On one hand, Justice White says that proportional representation is not guaranteed by the constitution, but on the other he says that a plaintiff must show that his party was disadvantaged at the polls in order to prove unconstitutional gerrymandering. If this is true, how can a plaintiff prove that he has been disadvantaged without asserting that subsequent elections have resulted in his party not receiving some approximation of the proportion of seats that one would expect from the vote his party received?

In her concurrence, Justice O'Connor indicates she believes that the Court may not be able to avoid endorsing the concept of proportional representation as a test of gerrymandering. She writes that under the Court's ruling, "there is simply no clear stopping point to prevent the gradual evolution of a requirement of roughly proportional representation for every cohesive political group."[11] Despite Justice White's statement that legislatures will not have to "come as *near as possible* to allocating seats" [emphasis added][12] in proportion to votes received might this eventually lead the Court to adopt the "*roughly proportional* representation" [emphasis added][13] test that Justice O'Connor expects?

Justice Powell, in his combination concurrence and dissent, concludes that "the failure to articulate clear doctrine in this area places the plurality in the curious position of inviting further litigation even as it appears to signal the constitutional green light to would-be gerrymanders."[14] Justice Powell states further that the Court's plurality says "plaintiffs apparently can meet the plurality's 'threshold' only after a number of elections have been held under the challenged plan."[15]

But Justice White directly responds to Justice Powell's assertion that gerrymandering can only be proved under the Court's ruling after "a number of elections." He says "*projected* election results based on district boundaries and past voting patterns may certainly support this type of claim [of gerrymandering] even where *no* election has yet been held under the challenged districting."[16]

Using Projected Election Results

The concept of employing "projected" election results in gerrymandering cases may encourage "battles of the experts"—each "expert" asserting his or her election projection scheme accurately reflects the likely results of future elections. Since the Court has not yet found "a likely arithmetic presumption"[17] to measure gerrymandering such as the "one person, one vote" rule governing the size of districts, it may be looking to future plaintiffs to represent an appropriate gerrymandering measure. A measure based on the discrepancy between the proportion of the total votes received and the seats obtained in a legislature may be an attractive candidate to the Court for a test because it can be reduced to a mathematical standard.

But first one must accept the premise that in a winner-take-all system there can be a close or even a rough match between the share of total votes cast for candidates of a party and the share of seats obtained by that party, and if so what would be a reasonable proximity to equality? If the Court chooses to pursue the issue of political gerrymandering in future cases, it may also decide that the votes-seats relationship is not important in identifying gerrymanders and some other indicator is more appropriate.

This article focuses on data on the *congressional* level because there is speculation that allegations of congressional district gerrymandering in California may spawn the next major gerrymandering case to come before the Court.[18] We examine some of the assumptions of students of gerrymandering by presenting:

(1) historical data on the votes-seats gap in the Congress between the major parties;

(2) explanations of what could account for the gap other than gerrymandering;

(3) "rules-of-thumb" for measuring gerrymandering effects that have been proposed using election data other than the "votes-seats" gap;

(4) and other (more traditional) approaches to identifying gerrymandering.

The Votes-Seats Gap in the House—Historical Data

At first glance, examining the gap in the aggregate vote shares received by the major parties and the seats they obtain in the House, appears to be a natural way of judging the fairness of districts. Arguably, if the votes-seats gap is large the districts were unfairly drawn. Looking further, we see the matter is not as simple as it appears on its face.

The chart presents the Democratic Party proportion of the major party votes cast in House elections from 1942 to 1984 and the share of House seats the party obtained. The Democratic Party's performance was chosen because the Democrats have controlled the House in all but two years (1946 and 1952), and the votes-seats gap favors the Democrats in all but three election years. The chart shows that in all but the 1946 and 1952 elections, the Democratic share of House seats exceeded the share of votes that Democratic House candidates received.

Calculations from the data used to produce the chart show that, since 1942, the proportion of House seats that the Democrats have received has exceeded the party's share of the major party vote by an average of 5.8 per-

cent. In contrast, in the two elections where the Republicans gained control of the House, the GOP's share of House seats exceeded the aggregate vote the Republicans received by 2.01 percent in 1946 and 0.71 percent in 1952.[19]

Based on this examination of elections since 1942, the 5.5 percent difference between the proportion of seats obtained and the votes received by the Democrats in 1984 does not appear unusual. When the Democrats have been in the majority in the House in the past 44 years, the votes-seats gap has been as low as 0.08 percent in 1954 and as high as 10.5 percent in 1964, a landslide election. One could argue that the 1984 votes-seats gap does not show that gerrymandering excessively affected results because they did not differ significantly from the historical average. But one could argue contrarily that the reason why 1984 does not differ from past experience is that since 1942, the historical average reflects a consistant pattern of moderately successful gerrymandering.

What Can Explain the Votes-Seats Gap?

From the perspective of the electoral performance of the major parties as displayed in the chart, can any observations be made about the votes-seats gap? With few exceptions, the chart shows that the proportion of votes that a party receives for its candidates will not *exactly* match the proportion of the legislature that the party holds. The data show this to be true regardless of party. Given the "winner-take-all" nature of our system of electing Representatives from districts, it is possible (though highly unlikely) that a party could win a bare majority of the vote and capture *all* of the seats in Congress.

The chart demonstrates that generally the larger the majority of votes that the victorious party wins, the greater the "bonus"—the excess over proportionality in seats—that party obtains. The discrepancy between votes and seats may be explained in part by the impact of gerrymandering, but it is likely that gerrymandering does not explain it all. Differences in voter turnout in districts that elect Republicans or Democrats, competitiveness in an election, evidence of efforts to concentrate or divide a party's supporters, and the size of the districts or the electorate, might help to explain the votes-seats gap.

Turnout

One of the axioms of the study of voting behavior has been the assertion that the better educated, more affluent citizen is more likely to vote than a less affluent, less educated citizen. A related belief among students of voting behavior is that the better educated, more affluent citizens tend to vote for Republicans more often than for Democrats.[20] If these assertions are true, then the types of voters who elect Republicans may tend to vote at a higher rate than Democratic voters. Studies bear this out, but the margin may be slight.

For example, an analysis of voters in the 1972 election showed that Republicans were more likely to vote than would be expected, based simply on the number of Republicans in the electorate. The study showed Republicans to be statistically overrepresented among persons who vote by approximately 4 percent.[21] In 1984, using similar data in the 1972 study, calculations show that among voters in the survey, 68 percent of the Republicans actually voted, as compared with 61 percent of the Democrats and 53 percent of the Independents.[22] Thus the data support the contention that Republicans are more likely to vote than Democrats, but the biggest gap is between voters who are affiliated with a major party and the Independents.

If Republicans are more likely to vote than Democrats or Independents, does this have any impact on the total number of votes cast in House races? In 1982 and 1984, approximately 10 percent more votes, on average, were cast in districts that elected Republicans than in districts electing Democrats. In 1980, prior to redistricting, the differential was approximately 19 percent.[23] The Democratic votes-seats advantage may partly be explained by higher voter turnout in districts that elect Republicans, and by the fact that Republicans are more likely to vote than Democrats.

Republicans, on the other hand, constitute fewer voters than do Democrats.[24] Consequently, it is still possible to argue that gerrymandering could have contributed to the "votes-seats" gap; *i.e.*, drawing boundaries to maximize Democratic party strength helps to offset the effect of higher Republican turnout.

Size Differences

Other factors that may contribute to the difference in the partisan vote cast among the congressional districts is their varying sizes among States—a matter which is independent of gerrymandering. The "average" size congressional district after the 1980 Census was approximately 519,000 persons. Districts ranged in size from 393,000 to 691,000 persons. (But *within* each State the districts were nearly identical in size.)

Although a vast majority of the districts fell within the range of 501,000 to 530,000 persons (323 of them), 112 districts were either smaller than 500,000 or larger than 531,000 persons. Not only do the congressional districts vary in size among States, but the number of potential voters (18 years and older), vary significantly as well. The range after the 1980 Census was from a low of 271,000 to a high of 495,000 potential voters.

Although a comprehensive list of the total number of *registered* voters for all the congressional districts does not exist because not all the States maintain voter registration data for such districts, another factor may affect partisan results—voter registration rates vary among districts. Ultimately, all these factors, varying district size, partisan turnout differentials, and potential and eligible voter differences among districts, can have an effect on the votes-seats gap.

Can the Votes-Seats Gap be Used as an Indicator of Gerrymandering Within States?

The votes-seats gap may never stand alone as a measure of gerrymandering because of problems relating to its use when there are only a small number of districts. It may be appropriate to look at the gap nationally, or in a large State legislature to see if a discriminatory pattern exists, but using the vote-seats gap as a measure of gerrymandering congressional seats in an individual State is another matter.

Even in the largest State delegation with 45 seats, a one seat shift has a big proportional impact. Thus in California, each shift of a seat between parties will result in a change of approximately 2.2 percent in the seat margin a party receives. In a 4-seat delegation, each shift produces a 25 percent difference in the margin. A 10-seat delegation yields a 10 percent difference for each seat shift. There are only 8 States which have 14 or more dis-

tricts in their congressional delegation. Using the votes-seats gap as a measure of congressional gerrymandering within States would be difficult enough to justify for the larger States (given the small size of their delegations), and it would be not at all appropriate for the small States.

Using the votes-seats gap as an indicator of gerrymandering on the *national* level for the House may also be inappropriate because we may be choosing the wrong unit of analysis. The fact that congressional districts vary significantly in size, and their district boundaries are drawn in 50 separate States, suggests that it may only be appropriate to analyze gerrymandering on the national level by analyzing each State's districting process and aggregating the data together to see a national picture.

If we accept that it *is* appropriate to evaluate the votes-seats gap on the national level, the differential in turnout and the number of votes that are cast in districts electing Republicans over Democrats may partly explain the votes-seats gap. But, as already noted, the data presented in the chart suggest there is a "bonus" effect—the greater margin of victory a party receives the larger the votes-seats gap. Is there any way of predicting what a "normal" gap might be?

The "Cube Law" and the "Swing Ratio"—Other "Rules of Thumb"

Political scientists have been considering the votes versus seats controversy for decades with little agreement among them. In 1950, a British statistician described a relationship between votes and seats which had been observed in British parliamentary elections known as the "cube law." "The law briefly states that the proportion of seats won by the victorious party varies as the cube of the proportion of votes cast for that party over the country as a whole."[25] Although this "law" appeared to work passably in explaining British electoral results, it never worked very well in the United States.[26]

In recent years a new measure of electoral performance (the "swing ratio") has caught the attention of political scientists. According to Richard Niemi, the swing ratio ignores the votes-seats relationship altogether. Instead, it focuses on "the responsiveness of seat changes to vote changes. In simplest terms, the swing ratio asks: Will seats change hands as votes change? Analyzing this relationship is very different from analyzing the ratio between votes and seats won."[27] Niemi defines the swing ratio as "the change in the proportion of seats won by a party that occurs when there is a 1 percent change in the votes won by that same party."[28]

Unfortunately, the swing ratio varies among countries, and within the United States it varies among States. The swing ratio even differs between the House and the Senate.[29]

Although the swing ratio concept holds promise as a means of judging whether a districting system is responsive to changes in the electorate, there is no firm agreement among political scientists of what a "normal" swing ratio is. The swing ratio may be too new to be used as a standard by the courts to evaluate partisan gerrymandering. The swing ratio is also subject to the same "size of the legislature" and possible "inappropriate unit of analysis" problems that the votes-seats gap measure is. Thus the swing ratio may be appropriate to use to evaluate districting in a State legislature, but be inappropriate for measuring gerrymandering in individual State congressional delegations.

If there are objections to both the swing ratio and the votes-seats gap as a measure of the effect of gerrymandering, are there any other possible measures using electoral data that have promise, *e.g.*, evaluating margins of victory?

Gerrymandering by Concentrating or Dividing Your Opponents Supporters

One technique of gerrymandering is to concentrate large majorities of the opposition party's supporters into a few districts thereby making your opponent "waste" votes which could be used in more competitive districts. Another divides a party's supporters among several districts to dilute the party's voting strength. Evidence of these practices could mean gerrymandering has occurred.

A simple way of looking for evidence of concentrating voters is to compute the average margin of victory for the candidates of each party to see if either party may be a victim of this practice. A high average victory margin would indicate such a concentration might have taken place. Data from the past three House elections show remarkably high average victory margins for *both* parties ranging from percentages in the high 20s to the low 40s.[30]

Although for the most part the Republican party's average margin was less than the Democratic party, there appears to be no conclusive evidence that either party was more victimized by concentrating voters than the other. One could argue in other words that these data indicate *bipartisan* gerrymandering may be occurring—districting designed to aid in the reelection of the incumbents.

Thus far, "rules of thumb" using electoral data such as the votes-seats gap, the swing ratio, and measures of victory margins, do not appear to be unassailable indicators of gerrymandering. So if an objective numerical measure of gerrymandering using electoral data has not yet been discovered, what about using traditional gerrymandering indicators such as looking for uncompact districts, strange shapes, and the failure of the legislature to respect political boundaries?

Other "Traditional" Approaches—Compactness, Respecting Political Boundaries, Strange District Shapes, and Intent

The Supreme Court requirements for numerically equal districts have made the "traditional" indicators of gerrymandering less easy to enforce because the States can ar-

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Note: Reports and committee prints may be obtained by contacting CRS, at 287-5700. GAO reports may be obtained from the Accounting Office, Distribution Section, Room 1518, 441 G St. N.W., Washington, D.C. 20548, or phone 275-6241; CBO reports from the Office of Intergovernmental Relations, Congressional Budget Office, phone 226-2600; for OTA reports Publishing Office, Office of Technology Assessment, phone 224-8996. Please note that some of the documents referenced are not available for general public distribution.

HARRY L. HOGAN

McClure-Volkmer Amendments to the Gun Control Act:

WHAT THEY MEAN to YOU

The McClure-Volkmer Amendments to Federal statutes controlling firearms and ammunition (18 U.S. Code 921 *et seq.* and 26 U.S. Code 5801 *et seq.*) were signed into law by the President on May 19, 1986, and in general will become effective on November 15, 1986. The culmination of a campaign pressed since 1979 by the National Rifle Association and other pro-gun groups, these amendments were fought by gun control leaders in Congress as an attempt to "gut" the Gun Control Act of 1968 (GCA). They are viewed by proponents, however, as needed reforms—to prevent law enforcement abuses and to relieve gun buyers, owners and licensees from restrictions perceived as irrelevant or needlessly onerous.

The bill signed by the President differed from the one introduced in 1979 by Sen. James A. McClure (R., Idaho) and Rep. Harold L. Volkmer (D., Missouri) and a number of cosponsors. It had undergone numerous changes during lengthy consideration by the Senate, over the course of several Congresses, and had been further modified in the House. The alterations—many of which were worked out through consultations between the principal Congressional players and Executive Branch officials—made the final product more palatable to the bill's opponents. However, enactment was still seen as a win for the National Rifle Association and its allies.

How will the amendments affect you as a private individual?

Interstate Purchase

If you ever need to buy a hunting weapon—a rifle or shotgun—while away from your home State, the new law will make it possible. Previously, the only legal out-of State transfers were long gun transfers made in a State contiguous to one's home State, provided both State legislatures had enacted legislation specifically allowing it. Now you will be able to obtain one in *any* State as long as you get it from a licensed dealer. However, the existing restriction on out-of-State handgun purchase (or sale to an out-of-Stater) remains in effect.

Transport Through Jurisdictions with Restrictive Laws

You will now be able to transport any legally owned and carried gun, in your automobile or other vehicle, through a jurisdiction* with a law that might otherwise prohibit you from doing so, as long as you would not be in violation of the laws of the place you are traveling to. The gun, however, must be unloaded and inaccessible. A separate bill—passed after the McClure-Volkmer bill was cleared—specifies how the term "inaccessible" is to be interpreted.

Purchase of Ammunition

You will again be able to buy ammunition and components by "mail order." Also, since dealers will no longer be required to keep records of ammunition sales (except in the case of "armor-piercing" ammunition), and since establishments that sell ammunition only (i.e., no firearms) will not be required to be licensed, you may now find ammunition carried by some stores that were previously reluctant to do so.

Transferring a Gun to a Prohibited Person

As a private individual—i.e., someone not licensed to engage in the firearm business—you will now be committing a Federal offense if you sell or otherwise transfer a gun to any person knowing or having reasonable cause to believe that that person is included in one of seven "high risk" categories enumerated in the statute: convicted felons, unlawful users of controlled substances or addicts to such substances, persons having been adjudicated as mental defectives or committed to a mental institution, and so forth.

Relief from Legal Disabilities

Under the old law, of all people in the prohibited person categories, only convicted felons whose crime did not involve use of a firearm or a violation of the Gun Control Act could be granted relief from the Act's sanctions against shipment, receipt, and possession of firearms; and State expunction proceedings did not erase Federal disabilities, Now, relief will be allowed for all categories of persons with firearms disabilities, and there is no longer a bar to relief for felons whose crime involved a firearm or who violated the GCA.

Transfers by Collectors or Casual Sellers

The GCA requires all persons "engaged in the business" of manufacturing, importing or dealing in firearms to secure a license from the Secretary of the Treasury. The amendments define "engaged in the business" as involving the "principal objective of livelihood and profit." The qualification is designed to protect unlicensed

Public Law 90-618
90th Congress, H. R. 17735
October 22, 1968

An Act

18, United States Code, to provide for better control of the interstate traffic in firearms.

t by the Senate and House of Representatives of the of America in Congress assembled, That this Act may Gun Control Act of 1968". Gun Control Act of 1968.

STATE FIREARMS CONTROL ASSISTANCE

PURPOSE

e Congress hereby declares that the purpose of this title upport to Federal, State, and local law enforcement r fight against crime and violence, and it is not the title to place any undue or unnecessary Federal restric- s on law-abiding citizens with respect to the acquisi- , or use of firearms appropriate to the purpose of 82 STAT. 1213 82 STAT. 1214 ooting, target shooting, personal protection, or any ivity, and that this title is not intended to discourage ivate ownership or use of firearms by law-abiding ocess, or provide for the imposition by Federal dures or requirements other than those rea- ent and effectuate the provisions of this

United States Code, is amended Ante, p. 226.

collectors, traders and casual sellers from being charged with illegal dealing.

Seizure and Forfeiture of Firearms

The forfeiture of firearms will be limited to those "used or intended to be used" in an alleged offense, to preclude the seizure of an entire collection. Further, forfeiture proceedings must be started within 120 days of seizure and, if the gun owner prevails, the court must award lawyer fees and return his property.

Registration

The Bureau of Alcohol, Tobacco and Firearms may not prescribe any new regulation requiring that licensee records be recorded at or transferred to any governmental facility. Moreover, any other additional requirement that might create a system of registration is prohibited.

Federal Crimes Committed with Guns

Under existing law, if you are convicted of committing a Federal "crime of violence" while using or carrying a gun, you are subject to a minimum enhancement penalty over and above any sentence you receive for the underlying offense. The amendments expand the provision to cover "drug trafficking" offenses and also provide that if a machine gun or a silencer is used in such instances, the enhancement penalty is doubled.

Machine Gun Freeze (Effective May 19, 1986)

It is now illegal for you to own or transfer a machine gun that was not lawfully manufactured and possessed (by someone, if only the manufacturer) before the President signed the amendments into law. In other words, any machine gun that was registered with the Secretary of the Treasury and otherwise legally possessed on May 19, 1986 continues to be legally owned and may be transferred, in accordance with the provisions of the National Firearms Act of 1934.

Intent Requirements, for Conviction of Violation

Under existing law, in order to secure conviction for an offense against the Act, the Government need only demonstrate in most instances that the person charged acted "knowingly." The amendments create a two-category system of state-of-mind requirements, specifying that with respect to a number of offenses—those that might be perceived as less serious—it will be necessary to show that the violation was done "willfully." Among the offenses subject to the higher intent standard, which you are most likely to commit if you are a nonlicensee, are:

(1) unlicensed dealing,

(2) transport into your home State of a handgun obtained from out of State, and

(3) transfer of a gun to a person who is from out of State.

How will the amendments affect you as a licensee?

Sale of Long Guns to Non-residents

Under existing law, you can't sell a firearm to a person from another State. An exception is made for sale of a rifle or shotgun to a person from a State contiguous to your own if both State legislatures have enacted laws permitting it; and such a sale is subject to police notification and waiting period requirements. The amendments will now permit you to sell a long gun to an individual from *any* State as long as the sale is legal in both the place where it occurs and the buyer's place of residence.

Government Inspections

Existing law allows Bureau of Alcohol, Tobacco and Firearms (BATF) agents to inspect your records and inventory at all reasonable times. Under the amendments, BATF will be restricted to one compliance inspection, without notice, within any 12-month period. Otherwise, inspections will be restricted to those where the government has a warrant based on reasonable cause to believe that evidence of a violation of law may be found upon your premises, except in the course of a criminal investigation of a person other than the licensee or for tracing a firearm.

Records and Reports

Records on the sale of ammunition will no longer be required except in the case of armor-piercing ammunition. If you sell a firearm transferred from inventory to a personal collection and held for a year, you will be required to keep only minimal records, essentially the same as those now required in the case of a transfer by a licensed collector. Existing regulations concerning reports required to be made to BATF are incorporated into the statute and no further reporting requirements may be made that would have the effect of transferring licensee records, or information based thereon, to any government facility.

Administrative Sanctions Against Licensees

The government will no longer be able to deny or revoke your license upon charges in a criminal case if you are acquitted or the case is terminated other than upon the government's motion prior to trial. A revocation action must take place within one year of the filing of an indictment or information, and all denials or revocations will be subject to *de novo* judicial review.

Selling at Gun Shows

Presently, going strictly by the statute, you are unable to sell firearms anywhere except on the premises specified on your license. The amendments incorporate the current BATF regulation allowing sale at temporary premises in connection with a show or event sponsored by a recognized organization interested in guns or gun use.

Importation

You will no longer be able to import the barrels of guns which have been designated as non-importable because they failed to meet the "sporting purposes" criteria under existing law.

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*As revised by P.L. 99-360, the provision's original reference to "interstate commerce" is deleted. Despite a colloquy in House floor debate, which appears to make clear that application of the revised provision is meant to be limited to *interstate* transport, opinion is divided as to the end result.

According to Department of Transportation (DOT) data, human error has been judged or reported to be the probable cause of most of the recent U.S. hazardous material transportation incidents and associated injuries. Despite the importance of training as a means of reducing the frequency of human error, the DOT has issued training regulations for drivers transporting and workers handling hazardous materials in the highway mode that lack consistency and do not require testing to ensure knowledge of hazardous chemical properties and risks and appropriate emergency response procedures.[1] In addition, these regulations, in general, provide little guidance to industry as to the objectives, content, and desired length of the required training. Nonetheless, compared to the number of hazardous material shipments made each year, the number of deaths and injuries associated with this transportation activity is relatively small. However, the potential for catastrophic events and huge property damages remain.

ARE STRONGER TRAINING REGULATIONS NEEDED for TRUCK DRIVERS and HANDLERS of HAZARDOUS MATERIALS?

Several congressional committees are working on legislation designed to improve the Hazardous Materials Transportation Act (P.L. 93-633). Among the various options being discussed is the strengthening of federally imposed training requirements for various personnel working in this industry. This article first considers whether increased training could reduce the role that human error appears to play in causing most hazardous materials transportation incidents. Second, DOT's current and proposed training regulations for truck drivers transporting and workers handling hazardous materials in the highway mode are analyzed. Finally, various legislative and administrative options designed to address some of the concerns raised herein are presented.

The Safety Record and the Role of Training

Each year more than 180 million shipments of hazardous materials are made in the United States. Over the last four years (1982–85), DOT reports there were an average of 9 deaths and 203 injuries resulting from some 6050 hazardous materials transportation incidents annually. (These data are neither comprehensive nor inclusive, but are the best available.)

A recent CRS study, using DOT's methodology, found that human error was judged to be the probable cause of 64.3 percent of these incidents and 51.4 percent of the resulting injuries requiring hospitalization which were directly attributable to the release of hazardous materials. Table 1 presents data on the judged or reported probable cause of some 24,200 recent incidents.

Improved training and testing of both workers and drivers may reduce the frequency of human error and its various facets, including ignorance, indifference, and carelessness. If the frequency of human error is reduced, the frequency of incidents should decrease. Thus, proper training may help improve the safety record of this industry, especially when training is coupled with periodic safety evaluations, job motivating incentives, and preemployment screening. Of course, training may never eliminate human error, and additional training requires funds and time.

DOT's Current Training Regulations

The CRS study evaluated DOT's current regulations that govern truck drivers transporting and workers handling hazardous materials in the highway mode.[2] The highway mode was selected for study because about 85 percent of the incidents and about 65 percent of the injuries mentioned above occurred in this mode of transportation. After a careful review of these DOT regulations, supplemented with numerous discussions with both industry and government officials, it was concluded that:

1. DOT's general training regulations covering *workers* handling, i.e., loading, unloading, blocking and bracing, hazardous materials in highway transportation can, at best, be considered to vague; and they do not specify the nature, content, objectives, or length of required instruction, or its desired frequency. The DOT regulatory training concept is, in general, simply to require instruction of various personnel, leaving much in the way of training specifics, techniques, and testing up to the carrier and the person offering hazardous materials for transportation.[3]
2. In addition, DOT's regulations do not require a certification and testing program designed to ensure that these highway-mode workers have a basic understanding of and sensitivity toward the hazardous properties of, and risks associated with, the chemicals with which they are dealing; nor do they require testing to ensure these workers' awareness and understanding of *appropriate* emergency response procedures pertinent to releases of hazardous materials.[4]
3. DOT, however, does require a hazardous identification or alerting system which includes shipping papers, markings, labels, and placards that can call attention to some of the chemical characteristics and some of the risks associated with the hazardous materials being transported. But, compliance with DOT's hazard-alert system does not ensure that all workers and drivers appreciate, or have been trained to

appreciate, the basic hazards and risks associated with the materials with which they deal.

4. Most *drivers* transporting hazardous cargoes simply have to take, but not necessarily pass, a 66-question, open-book examination; must be certified on various driver qualification requirements, including a road test; and be "thoroughly instructed" on the regulations. The eight questions on DOT's written examination dealing with the Hazardous Materials Transportation Regulations (HMTR) do not comprehensively test knowledge or understanding of these regulations. DOT's examination does not test whether someone is trained in, or has a basic understanding of, emergency response procedures appropriate to the job and responsibilities of being a driver of a truck transporting hazarous materials. A working knowledge of this information might be of lifesaving benefit to drivers, emergency response personnel, such as police and fire fighters, and the affected public in case of an incident.

5. Although DOT's training requirements for *drivers* can vary depending on the material being transported, they are not consistently based on the potential risks associated with the commodity being shipped. For example, fairly detailed Federal training requirements exist for drivers transporting highway route controlled quantity radioactive materials and flammable cryogenic liquids in cargo tanks on a public highway. But, drivers transporting most other hazardous materials, such as liquified petroleum gas, poisons, corrosives, and various regulated wastes, are generally not subject to the same detailed Federal driver training requirements. Some of these other hazardous materials, if released, can kill and injure, just as can the release of certain radioactive and flammable cryogenic materials. From a technical and safety perspective, it makes little sense for DOT to have fairly detailed training regulations for drivers transporting liquefied natural gas, which is a flammable cryogenic, but not for drivers transporting liquified petroleum gas. Both materials, if improperly released, can result in major catastrophic events.

6. Although DOT's specific requirements for drivers transporting certain radioactive materials and flammable cryogenics are fairly detailed, DOT does not require a formal test and demonstration of the required knowledge called for by these regulations. DOT simply states that the drivers transporting these cargoes must be given written training materials.

7. DOT's training regulations for truck drivers are much more geared toward operating and controlling the vehicle than toward ensuring recognition of, and appreciation for, the hazards of the materials being transported.

8. Unlike many other safety concerns that are governed by complex and detailed HMT Regulations, the Department, for the highway mode, appears to have devoted little attention to regulations addressing the major role that human error is judged to play as the probable cause of most hazardous materials transportation incidents.

9. Although DOT inspectors from the Bureau of Motor Carrier Safety have discovered alleged violations of various training regulations, the Department has only occasionally pursued an enforcement case to the point of collection of a penalty assessment. The lack of specificity in DOT's general training regulations, e.g., 173. 1(b) and 177.800 (a), makes enforcement difficult.

10. DOT's regulations do not provide the Department with any quantitative measure of how well drivers or workers have been trained. Currently, DOT must rely primarily on its infrequent inspections, supplemented with information from State and local inspections, to obtain insights into how well industry is complying with, or understanding, its regulations.

These ten findings raise many concerns—some of which may be relevant to congressional oversight and possible action; others may be addressed solely by DOT actions.

TABLE 1. Judged/Reported Probable Cause of Hazardous Materials Transportation Incidents—Actual Number of Incidents Used as Indicator.

Judged/ Reported Probable Cause of Incident	1982 *% of Incidents*	1982 *% of Yearly Total of Incidents*	1982 *% of Yearly Total of Injuries*	1983 *% of Incidents*	1983 *% of Yearly Total of Incidents*	1983 *% of Yearly Total of Injuries*	1984 *% of Incidents*	1984 *% of Yearly Total of Incidents*	1984 *% of Yearly Total of Injuries*	1985 *% of Incidents*	1985 *% of Yearly Total of Incidents*	1985 *% of Yearly Total of Injuries*
Human Error	4,340	65.5	46.9	3,874	65.5	52.3	3,839	66.5	47.1	3,576	59.8	59.2
Vehicle Accident/ Derailment	391	5.9	23.1	328	5.0	3.2	326	5.6	12.5	346	5.8	6.4
Package Failure	1,731	26.1	23.1	1,540	26.4	34.6	1,334	23.1	22.2	1,977	33.0	34.0
Other	163	2.5	6.9	84	1.4	9.6	271	4.7	18.3	85	1.4	.4

SOURCE: Data supplied by Dr. Robert McGuire of the Office of Hazardous Materials Transportation, Dept. of Transportation.

[a]Data for 1985 include all 1985 incident reports filed between Jan. 1, 1985 and Feb. 1, 1986.

The remainder of this article outlines some of the options that Congress might want to consider regarding the strengthening of Federal driver and worker training regulations.

Option #1—Waiting for DOT to Act or Maintaining the Status Quo

One option would be for Congress to wait for DOT to strengthen and improve its own regulations in this area. On May 13, 1986, DOT took a major step in this direction by issuing a notice of proposed rulemaking which would strengthen some of the current requirements affecting highway transportation. (See the May 13 edition of the *Federal Register* for details on this proposal.) However, the proposed regulations do not address many areas of key concern.

For example, DOT's proposal does not:

- cover drivers transporting all hazardous materials shipments;
- cover all workers handling hazardous materials shipments who are not drivers;[5]
- require that administration of DOT's written examination and certification of drivers on all other DOT requirements be conducted by an objective third party, such as an employee of a State motor vehicle administration. (Under both the current and proposed regulations, testing and certification of drivers on many DOT requirements would remain a responsibility of the motor carrier.);[6]
- require drivers to obtain a passing grade on DOT's examination; and
- revise DOT's current examination to ensure that drivers are tested on appropriate emergency response procedures to be followed in the event of an incident.

It should be understood that DOT may substantially alter this proposal before its final regulations are issued.

In addition to waiting for DOT to issue its final regulations, Congress, could decline any action to strengthen DOT's worker and driver training regulations. Some might argue that industry's current training efforts combined with various union contract provisions represent a sufficient and cost-effective level of training. Further it can be argued that detailed and elaborate new Federal training regulations are unnecessary, especially in view of industry's safety record—one injury per more than 880,000 shipments, roughly estimated according to DOT data. They also could assert that new regulations would be difficult to formulate and would involve the Department in unproductive micromanagement.

However, if Congress decides to specify how DOT's regulations should be strengthened, several options might be considered. Two of these are presented as follows.

Option #2—H.R. 4612—Congressionally-Mandated Training Regulations and Guidelines

One approach, which is supported by some of the recommendations of the National Transportation Safety Board, is to encourage the States to implement uniform programs for licensing or certifying truck drivers to transport hazardous materials. This approach is basically incorporated into H.R. 4612, a bill that is currently the focus of a great deal of attention with approximately 40 co-sponsors. As specified in H.R. 4612, the Secretary of Transportation would be required to establish minimum qualifications for these licenses. For example, among its many provisions, H.R. 4612 would require drivers of trucks laden with hazardous materials to complete successfully a written examination, to have experience in transporting non-hazardous materials and in handling these cargoes, and to know response procedures for emergencies arising out of the transportation of hazardous materials.

States that did not adopt the Federal driver training requirements would be subject to losing 15 percent of their safety grants provided under the Motor Carrier Safety Assistance Program (MCSAP). This "carrot and stick" approach would be in effect each year in which a State did not apply the Federal standards.

H.R. 4612, if enacted into law, and implemented by both government and industry, could address many concerns that have been expressed regarding DOT's current and proposed training regulations:

By increasing the specificity of DOT's regulations, this bill could encourage carriers to strengthen their training programs and could stimulate DOT to focus more on training than it has previously.

By requiring DOT to establish training guidelines, this bill could better inform both shippers and carriers as to what constitutes an acceptable training program.

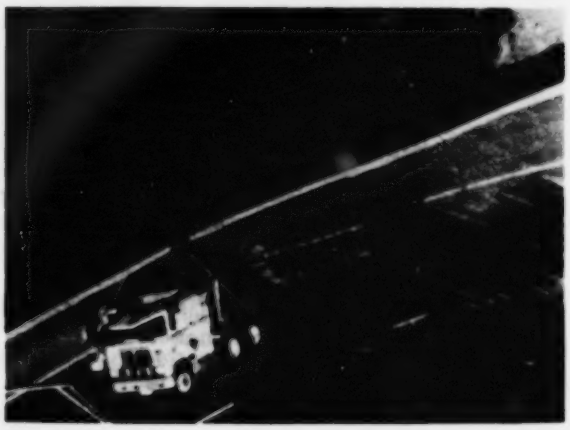
By increasing the knowledge of both workers and drivers on the proper handling of hazardous materials, this bill could increase the sensitivity of these personnel to the hazards with which they must deal.

By increasing their knowledge on appropriate emergency response procedures, H.R. 4612 might help save lives and reduce property losses.

By requiring national minimum standards for the licensing by States of drivers transporting hazardous materials, H.R. 4612 could increase uniformity in the qualification of these drivers and objectivity in their testing.

Although H.R. 4612 could address many concerns, this bill could raise additional concerns and would leave others unresolved. For example, H.R. 4612 requires DOT to issue guidelines for the training of workers handling hazardous materials, but it does not require testing of all of these personnel.[7] It remains unclear how effective training guidelines would be when compared to a Federal regulation requiring periodic training and testing or certification. Such a regulation would provide documentation that training actually occurred and that a worker knows how to perform his job safely. Formal testing also would underscore the importance of training.

Continued on Page 29



The T-46 VS T-37 TRAINER: WHICH CAN WE AFFORD?

The U.S. Air Force's T-46 Next-Generation Trainer has become an issue of controversy in congressional consideration of the FY 1987 defense budget. Planned in 1982 for 652 planes, the T-46 program was estimated in 1985 to cost some $3.5 billion through completion—or about $5½ million a plane. The trainer program is much smaller than the service's combat aircraft programs, such as the $53-billion 3,055-plane F-16, and the $38-billion 1,286-plane F-15 fighter programs. In the present budgetary climate, however, the Air Force appears to consider the new trainer a less urgent requirement than programs that would expand force structure and strategic capability. Moreover, the Next-Generation Trainer program has been criticized for cost overruns, production problems, schedule delays, and faulty management.

BERT H. COOPER

The Air Force has recommended cancelling the program, but T-46 supporters in Congress, especially in the House, argue strongly for continuing the program. The current debate centers on issues of budget costs, service priorities, and longer-term cost-effectiveness of the Air Force's trainer program. Regional economic and commercial interests, involving employment at Fairchild Republic facilities on Long Island and Cessna's facilities in Kansas, are also at stake.

Program Background

The Fairchild Republic Company developed the T-46 to replace the USAF's fleet of 600 T-37B trainers. (Between the mid-1950s and 1977, the Air Force bought about 950 T-37s, produced by Cessna Aircraft Company of Wichita, Kansas. Although some of the oldest T-37s may be nearing the end of their service life, currently estimated at 18,000 flying hours, the fleet average is below this figure.) The Air Force had planned to begin retiring the T-37 during the late 1980s when the T-46 was expected to be in production. However, in March 1986, the service decided to terminate the T-46 program after procurement of two prototypes and only 10 production aircraft.

According to the Air Force, "Schedule delays and manufacturing problems, coupled with a lack of affordability, made this decision necessary." In keeping with this decision, the Administration requested no procurement funds in FY 1987 and decided not to use the procurement funds provided in FY 1986, which totalled $169.9 million after reductions via Gramm-Rudman-Hollings legislation.

The Air Force expects to be able to continue using Cessna T-37Bs without major modifications for several more years. Longer-term options include:

(1) refurbishing the T-37Bs to extend their service lives,

(2) putting T-46 engines and components in an upgraded T-37,

(3) procuring foreign trainers already in production,

(4) developing a new aircraft, or

(5) deferring production of the T-46 until the early 1990s.

The Fairchild T-46 versus the Cessna T-37

Both the Fairchild T-46 and the Cessna T-37 are twin-engine, two-seat aircraft with the side-by-side seating of instructor and trainee that the Air Force prefers (in contrast to the Navy's preference for front-to-back tandem seating). The T-46 has better performance capabilities than the T-37 in many respects, with a range of 1,200 vs. 500 nautical miles (nmi), a speed of 430 vs. 370 knots (nmi/h), and an altitude of 47,000 vs. 25,000 ft. In contrast to the T-37, the T-46 has a pressurized cockpit, improved ejector seats and avionics, and the more fuel-efficient F-109 turbofan engine.

Proponents of the T-46 hold that it will meet Air Force needs for a new and more capable trainer aircraft, which will make pilot training easier,

safer, and more cost-efficient. Because of its pressurized cockpit and more powerful engines, the T-46 can operate in worse weather than the T-37 and at higher altitudes where the air space is less congested by civil aviation. Thus, the T-46 would provide better training for more hours at less operating cost, according to its advocates.

Opponents of the T-46 maintain that because of current budgetary constraints and service priorities, the Air Force cannot afford to continue this program, which has experienced cost overruns, schedule delays, and production problems. Soon after the contract award in 1982, Fairchild's actual costs were higher than expected, and the first flight of the prototype in October, 1985, occurred six months later than originally scheduled. Air Force reviews of contractor operations during 1985 found numerous production deficiencies and management faults, which led the service to begin withholding 50 percent of the contractor's progress payments in August 1985.

Since April 1986, however, the Air Force has withheld only 25 percent of Fairchild's progress payments, citing substantial progress by the contractor in correcting last year's deficiencies. Improvements in the T-46 program were also noted in a recent report by the General Accounting Office (GAO), which reviewed its cost and production problems in detail. According to this GAO report, "An Air Force Air Training Command official said that based on actual flights by their personnel the T-46A's performance was excellent, met the Command's needs for a modern trainer, and would save millions of dollars in yearly maintenance cost."[1]

A "New-Technology" T-37 or a "Next-Generation" T-46?

Meanwhile, the Congressional Budget Office (CBO) has noted in a recent report that a major modification of the T-37 is possible which would give the modified trainer many of the capabilities the T-46 is expected to have. Such a program would include extending the T-37's service life into the next century as well as providing a new engine, a pressurized cockpit, better ejection seats, and improved avionics. However, because of the time it would take to design and implement these modifications, the Air Force's training needs would not be met until the mid- to late-1990s.

CBO concluded that the total investment costs of a major modernization of the T-37 would be about 23 percent less than what it would cost to continue the T-46 program. Counting all acquisition and ownership costs over 20 years, the T-37 modification would be 2 percent more expensive than continuing the T-46, because of the T-37's higher operating costs.

CBO also postulated minor modifications of the T-37 merely to extend its service life and possibly to re-engine the aircraft. Such a course would meet Air Force needs to some extent over the short run and would be much cheaper in near-term investment costs than either continuing the T-46 program or modifying the T-37 more significantly. Over the long run, however, the higher operating costs of the

T-37 would tend to offset the savings in investment costs. Moreover, minor modifications of the T-37 would not provide the improvements in safety and performance capability that the Air Force has sought to achieve through the T-46 program.[2]

Congressional Action on the T-46 Program

Congressional supporters of the T-46 are trying to reverse the Air Force's decision to stop the program. The Senate Armed Services committee recommended no funding for the program in the FY 1987 defense authorizations bill (S.2638), but the House Armed Services Committee recommended $151 million for procurement of 12 aircraft in FY 1987.

The Committee would require, however, that the program be opened for bids from other contractors if the cost of 650 production aircraft exceeds $3.1 billion (FY86$). The House Committee's concern about cost reflects persisting reports of likely cost overruns in the Fairchild Republic program.

Meanwhile, whether the program's $169.9 million in FY 1986 procurement funding can be spent may depend on whether the program is funded in FY 1987. The Senate voted on May 15, 1986, through an amendment to the Uniformed Services Retirement Cost Reduction Act (H.R.4420/S.2395) to de-authorize these FY 1986 procurement funds; however, House and Senate conferees later agreed that these funds can be spent either

(1) if FY 1987 procurement funds are authorized for the T-46 or

(2) if the FY 1987 defense authorizations bill has not been passed by Oct. 1, 1986.[3]

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[1]General Accounting Office. Aircraft procurement—development and production issues concerning the T-46A aircraft. GAO/NSIAD-86-126BR, May 1986. 23 p.

[2]Congressional Budget Office. Alternatives for an Air Force Trainer: T-46 or Modified T-37. Staff working paper by Lane Pierrot, March 1986. 31 p.

[3]For the current legislative status of the program, see CRS Issue Brief 86082, T-46 Trainer Aircraft (Weapons Facts), periodically updated by Bert H. Cooper.

AIR FORCE TRAINER— COMPACT MODEL

SOCIAL SCIENCE APPROACHES TO INNOVATION AND PRODUCTIVITY

CHRISTINE MATTHEWS ROSE

The current debate on the reasons for the declining rate of productivity growth and the extent of Federal involvement in the support of innovation has largely ignored the potential contributions of the social sciences, other than economics.[1] Innovation and productivity issues are not limited to technical considerations, but also involve organizational and social factors. The results of social science research can operate, some would argue, as a decisive factor in raising the efficiency and productivity of industry. While technological innovation can and does play a major role in stimulating productivity, human, social, and institutional issues can also figure into improved performance relative to past efforts.

Many analysts have concluded that insufficient capital investment, trade policies of our competitors, and overemphasis on short-term profits are causes of the decline in the ability of U.S. products to compete in world markets. The investment of capital and the introduction of new technology are normally integral to any productivity improvement program, but so are the human resources of the organization. Estimates given by the president of the Work in America Institute indicate that the human resource factor contributes between 10 and 25 percent to productivity growth.[2] In general, labor accounts for 50 percent or more of controllable costs. This percentage increases in labor-intensive service occupations where people account for approximately 70 to 80 percent of all costs.[3]

Most current approaches to increased productivity focus on economic and technological policies. Such approaches tend to give minimal attention to the various social factors involved in the development and adaption of innovations and the potentially significant contributions that non-technological (social) innovations can make to national economic development.

Technological versus Social Innovations

Technological innovation is a dynamic process by which industry seeks to improve goods and services or the process by which it provides them. Innovation is a process which involves, among other things, idea origination, research and development, investment commercialization, and diffusion. Successful innovations enhance economic growth through product and productivity improvements and the income generated by these improvements when taken into the marketplace. In the past several years, Federal and State governments have identified technological innovation as a key to future economic growth and have developed de facto innovation "policies" by

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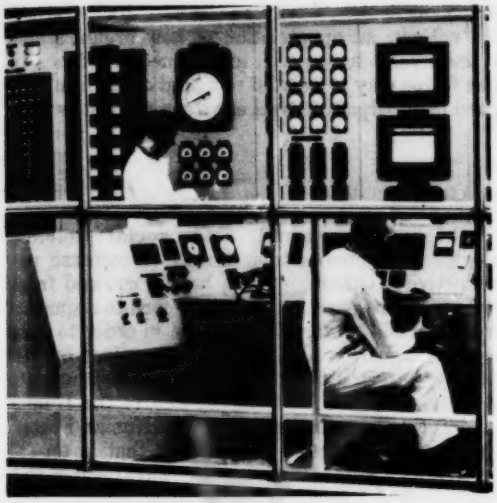

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"....person/machine dynamic approach...."

A slowdown in U.S. productivity growth rates combined with a more competitive international marketplace appear to have weakened the Nation's economic vitality. It has been argued that efforts to improve the competitiveness of U.S. industry have generally failed to use effectively the results of social science research, which has the potential to both enhance and inhibit productivity and innovation. Instead, industry has focused mainly on such issues as the effects of governmental regulation, on short-term profits, and on trade policies of U.S. competitors, factors which are more tangible and easier to control and measure. The argument concludes that management and labor use of social science research may be a necessary condition for creating the environment in which industry can successfully improve its productivity performance and lower its cost of production. Skeptics remain unconvinced that there is any appropriate promotional role for government.

emphasizing hardware development and technology transfer. However, productivity change and economic growth often include both technological and nontechnological innovations.

Those innovations generated by social science research—social technologies—include the development and use of certain research methodologies, even though there has been no association with material systems or machines (hardware technologies). It has been argued that these social innovations can, in some instances, complement the introduction of new hardware technologies in both the productivity and social gains exceeding those attributable to technology alone. Included among the social technologies that may be important to innovation and productivity are personnel selection and assessment, survey research, program evaluation research, technology and risk analysis, statistical techniques and sampling theory, and human factors research.

Businesses use information obtained from surveys and samplings to assess public attitudes toward product alternatives and to predict future revenue. Innovators use survey research methodology to determine the market potential of new products and services. The technique of program evaluation is important to the private sector's interest in innovation and productivity because it allows for assessments of the relative merits of marketing, training, organization, and executive development programs. Technology and risk assessments have evolved to help determine the long-term effects of various technological choices. Such assessments are utilized today as components of regulatory and other public policy debates.

Limitations of Social Technologies

While social technologies are used extensively in certain areas of marketing, and the military services, they have not received widespread adoption and utilization in the private industrial sector. It has been proposed that a possible factor preventing the maximization of social technologies is the inability to identify exemplary social technologies, those having a strong research base, demonstrable benefit, and replicable procedures. Another possible reason is the difficulty in realizing profits from any investments in their innovations. Products resulting from hardware technological investments can be marketed profitably with protection of patent laws. In contrast, the nonproprietary nature of social technologies makes the results readily accessible in the scientific literature.

Criticism, however, has been made of social technologies and social science R&D in that they are often esoteric and unrelated to real goals. Michael Maccoby, Kennedy School of Government, Harvard University stated that "... social scientists can make themselves a nuisance by their compulsion to measure everything, including the unmeasurable."[4] In addition, the results of social science research when used in private industry have not been universally favorable. Though successes are common, and many applications are routine, failures are not uncommon and tend to attract publicity.

The focus of the next section will be given to one specific social technology, that of human factors research. The application of human factors issues to more effectively raise productivity and lower production costs, gives consideration to the utilization and participation of people in the production process and the design of systems based on workers motivations, capabilities, and limitations.

Human Factors Research

As used by its practitioners human factors research pertains to the interaction of people with technical devices and the environment. This person/machine dynamic approach covers topics on person/vehicle control and person/process control, both concentrating on the human contribution to the avoidance of system failure and ease of adaptability to the new technologies which can make a person more productive in his/her job. Also referred to as *ergonomics*, and a methodological concept that is approximately 50 years old, only in the last 10 years have human factors research issues received notable public attention, possibly attributable to such developments as:

(1) accidents receiving widespread attention like that at Three Mile Island Power Plant or the Bophal incident;

(2) growing awareness that major deficiencies in military

systems directly result in the inadequacy of current system design for use and ease of maintenance;

(3) notably successful applications of human factors concepts in competitive Japanese consumer imports; and

(4) increased public awareness that the effectiveness of high-technology systems in the workplace, schools, and home is dependent upon the amount of attention attributed to the needs and reactions of the human users of that technology.[5]

Human Factors Research in the Design of Facilities and Technology

One challenge to management which might improve productivity is the design of structures and environments which are people-oriented. Incorporating human factors at this level of technology involves predicting how a particular design solution will interact with a myriad of other design decisions, which clearly should not be incompatible.

There is statistical evidence which indicates that efforts to improve productivity by incorporating human factors engineering/ergonomics can bring significant results. A study conducted in 1982 by the National Institute of Occupational Safety and Health found 24.5 percent greater productivity when management and industry employed proper ergonomic set-up of a visual display terminal work station.[6] In addition, the World of Work Report noted that ergonomically designed furniture has been shown to result in a 10.0 percent performance increase for dialogue transactions and 15.0 percent increase for data entry.[7]

Human Factors Research in Management and Organization for the Workplace

There are critics who blame the perceived decline in the growth of technological innovation on the management practices and strategies of U.S. companies. In considering management style issues, quality circles have been found to be useful for productivity improvement in certain industrial organizations. The quality circle concept is a social technology used extensively by the Japanese but which originated directly from the theoretical and applied substantive concerns of U.S. social science. Quality circles are teams of workers, including managers and nonmanagers, who meet regularly to anticipate and to solve production and quality problems. Quality circles recognize that quality production is a joint responsibility and that solutions often require joint effort.

However, reports of successful quality circle programs can create a misleading picture of the preparation and implementation requirements, the length of time it takes to launch an effective program, and the costs involved. Tai K. Oh, a consultant to businesses in the United States on Japanese management techniques contends that quality circles provide only temporary relief to management-employee tensions and fail to address the fundamental issues that cause these tensions initially (i.e., lack of respect and underutilization of workers).[8] Oh estimates that approximately 60 percent of U.S. industries that initiate quality circles experience failure.[9] Richard Balzer, Vice President, Yankelovich, Skelly and White, Inc., warned that, "... without an appreciation of how organizations adapt to and avoid change well intentioned responses to the human factor may be related to a kind of faddism that has plagued many organizational efforts in the last twenty years."[10]

Conclusions

Some observers contend that social science methodologies have proven their ability to increase national productivity. Other countries have borrowed from U.S. social science research, mainly in regard to organizational structures and management styles, in order to gain economic advantages. Caution, however, is voiced by Michael Maccoby, Director, Kennedy School of Government, Harvard University in his testimony before the House Science and Technology Committee on the Human Factor in Innovation and Productivity. He noted that in an attempt to produce scientific results, paralleling the methodologies of the "hard" sciences, some social scientists have produced a lot of meaningless research. He concluded that, "Concrete collaboration with other sciences, each bringing their contribution to solve complex problems is today the challenge and the new opportunity of ... [the] social sciences."[11]

As Government policies are developed, some argue that it is important that the range of such policies be expanded to include efforts to encourage the private sector to incorporate the results of social science research; others are skeptical, seeing little justification for a governmental role in a market function.

[1]The social sciences are not representative of a uniform set of knowledge. Several disciplines, theoretical orientations and various methodologies are subsumed under the social sciences. For the purpose of this paper, social science will be examined in terms of the following methodologies: social science as a source of social technologies, social science as a source of general and specific knowledge pertaining to innovation and productivity and social science as a source of management tools. This approach has been used by Tornatzky, Louis G., Solomon, Trudy, et al. Contributions of Social Science to Innovation and Productivity. American Psychologist, v. 37, p. 738. As noted, this discussion excludes economics, which is a social science discipline.

[2]U.S. Congress. House. Committee on Science and Technology. Subcommittee on Science, Research and Technology. The Human Factor in Innovation and Productivity. Hearings, 97th Cong., 1st Sess., Sept. 1981. Washington, U.S. Govt. print. Off., 1981. p. 54. (Hereafter cited as Human Factor in Innovation and Productivity.)

[3]Ibid.

[4]The Human Factor in Innovation and Productivity, p. 11.

[5]U.S. Congress. House. Committee on Science and Technology. Task Force on Science Policy. Role of the Social and Behavioral Sciences. Hearings, 99th Cong., 2nd Sess., Sept. 19, 1985. Hearings Transcript, Testimony of Richard W. Pew.

[6]World of Work Report. Ergonomics and Productivity, v. 9, Aug. 1984. p. 5.

[7]Ibid.

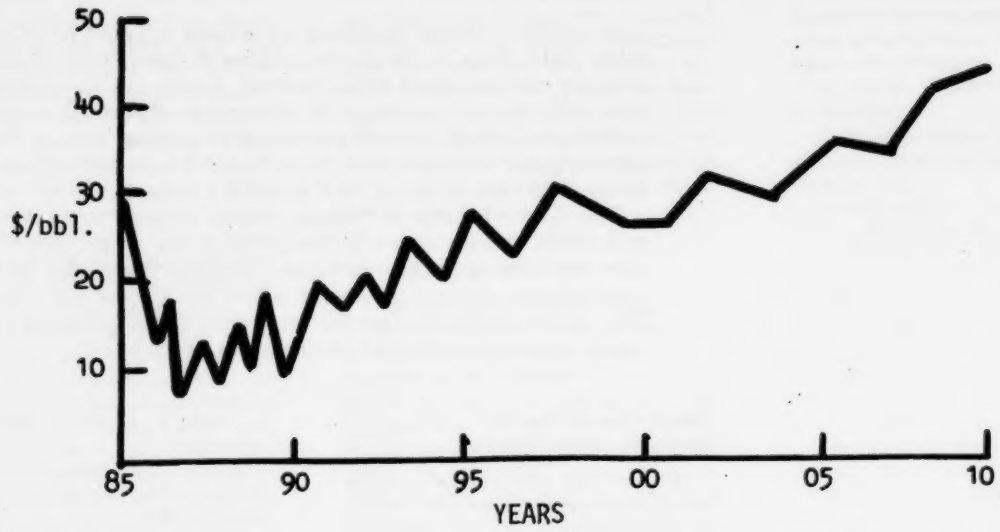
[8]Marks, Mitchell Lee. The Question of Quality Circles. Psychology Today, Mar. 1986. p. 38.

[9]Ibid.

[10]Human Factor in Innovation and Productivity, p. 106.

[11]Ibid., p. 43.

Many Faces of Oil



The Generalized Behavior of the Real Crude Oil Price Under a Delayed Agreement

By early 1986, it became apparent that OPEC had under-estimated world response to over $28 oil prices. Having no control over demand, the cartel lost control over supply and strong downward price pressure resulted, driving oil prices as low as $7.00/bbl. Saudi Arabia in its role as "swing producer", had initially attempted more or less singlehandedly to stabilize prices. But when Saudi output bottomed at 2mbd, it became clear—as other producers maintained high levels of output—that this unilateral action was not enough. Saudi Arabia joined the quest for broader market share. As it increased output to an estimated 6mbd at the end of July, prices continued to tumble.

There are no signs that OPEC can hold to an agreement on production quotas and stabilize prices, even though a $7.00 price should provide strong incentive to do so. This could result in unstable prices over time, which track a pattern of attempted Cartel adhesion followed by collapse of the agreement. The resulting price fluctuations would have a broad range, most likely between $5 and $20 per bbl. There is a historical precedent for this kind of price behavior for crude oil when substantial production capacity exists in many countries and there is no functioning external control mechanism.

Expert opinion, polled at a recent CRS sponsored discussion group, suggests that any one of three price paths is possible. Perhaps the most favored at the moment is graphically illustrated above. Displayed here are several years of instability and low prices followed by a reassertion of OPEC control. Saudi Arabia would find itself in a more dominent position in a world characterized by stronger oil demand and lower production elsewhere, since high cost production would have suffered under several years of low prices.

Another possible future is that current low prices will create a severe enough crisis in countries accustomed to and dependent on high oil prices that an agreement will be forced on the dissident group. Indeed the financial incentive to achieve such an accommodation is great. Were this to happen, the likely initial target price would be $18–$20 per bbl, although there is some debate over the sustainability of prices in excess of $15. Major consuming countries might find this sort of stability acceptable in as much as they fear their imports growing uncontrollably at very low prices. In consuming countries with oil production of their own—notably the United States—those concerned over the viability of domestic output could welcome such a development.

Perhaps a less likely future—although one not to be forgotten—is for no firm collective agreement among producer/exporters to emerge or a capable and willing swing producer to appear. Absent that, price instability could continue into the late 1990s.

This is a summary of CRS Report No. 86-136S, "The Many Faces of Oil" by John Schanz, Jr., senior specialist, Office of Senior Specialists, and Lawrence C. Kumins, specialist, Environment and Natural Resources Policy Division, July 24, 1986.

Government Income Support Payments:

Since 1975, Federal spending on income support programs grew more slowly than in the previous three decades. Federal spending is a major component of total Federal, State, and local government spending on income support programs. After 10 years of real (inflation-adjusted) growth averaging 11 percent a year, Federal income support outlays grew from Fiscal Years 1975–85 at the relatively slow rate of about 3-1/2 percent a year.

The slower growth in Federal income support spending since the mid-1970's and increases in the poverty rate from 1979–83, heightened concerns about how combined Federal, State, and local government income support payments affect family and personal income. This article addresses two such concerns: the distribution of cash income support benefits and their impact on poverty.

GENE FALK

Composition of Federal Income Support Programs.

The Federal government makes benefit payments to or for certain groups of families or individuals. In FY 1985, Federal spending for these programs reached $426 billion, 45 percent of total Federal outlays. This includes spending on both cash and noncash income support programs.

Income support programs providing benefits to retired, disabled, and unemployed workers, and sometimes their families, based on their past work history are called work-related entitlements. In FY 1985, these programs accounted for 75 percent of Federal spending on income support. Need-tested programs, which aid certain low-income people and families, accounted for 17 percent of FY 1985 Federal income support spending. State and local governments also make some income support payments, though no data on State and local expenditures consistent with the Federal budget data discussed here are available.

The Impact of Government Income Support on Personal and Family Income.

This article uses information from the annual March supplements to the Current Population Survey (CPS) to examine the impact of government income support on personal and family income. The CPS data cover cash benefits paid by Federal, State and local governments from the following programs

(1) social security and railroad retirement;

(2) unemployment compensation, workers' compensation, and veterans' benefits; and

(3) cash welfare from Aid to Families with Dependent Children (AFDC), Supplemental Security Income (SSI), and State-run General Assistance programs.

Because of data and methodological limitations, noncash income support from programs such as medicaid, food stamps, and housing assistance is generally excluded from the following discussion.

The Distribution of Federal, State, and local Cash Benefits.[2]

This section examines the distribution of Federal, State, and local government cash benefits, the share of total benefits received by families at different points in the income distribution. Several measures of income may be used to study the distribution of benefits; this article studies the distribution of *need-adjusted* benefits across families ranked according to their *need-adjusted* total cash income. Both benefits and total income are adjusted for need by dividing them by families' poverty thresholds. While a technical discussion of this method is beyond the scope of this article, the need-adjustment simultaneously controls for both inflation and family size. Families are then grouped into quintiles according to their rank. Quintiles are one-fifth of all families.

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THEIR DISTRIBUTION and IMPACT on POVERTY, 1975 TO 1984[1]

Cash benefits are received by families at all points of the income distribution: those at the upper-end of the income distribution as well as the poorest families receive government cash aid. Cash benefits are broadly distributed across the income distribution because of the dominance of work-related benefits, such as retirement benefits from social security and railroad retirement and unemployment insurance. Cash welfare is generally restricted to families toward the bottom of the income distribution.

TABLE 1 shows the distribution of Federal, State, and local government cash benefits across the quintiles for 1975–84. There was a marked shift in the distribution of need-adjusted cash benefits beginning in 1979. Since that year, the share of benefits going to families at the upper-end of the income distribution increased, while the share going to the poorest families declined.

Why has the upper-end of the income distribution received an increasing share of need-adjusted government cash benefits? This may be caused, in part, by work-related benefits, that accounted for a growing share of total income support. Over the 1975–84 period, cash benefits from retirement, and disability programs generally continued to increase in real terms, while cash welfare spending declined in real terms. Work-related benefits are more broadly distributed than cash welfare, because they are paid regardless of a person's or family's financial need. Moreover, the share of social security and railroad retirement benefits going to families at the upper-end of the income distribution also increased.

Cash Benefits and Poverty.

The discussion now focuses on how Federal State and local government benefits affect income at the bottom of the income distribution: their impact on the poverty rate. The poverty rate is based on total cash family income, including income from the market place (for example, wages, interest, and property income) and income from government cash benefit programs. To measure the impact of government cash benefits on poverty, this article uses poverty rates calculated both before and after counting income from three categories of cash government aid. An important limitation of this analysis, however, is that it does not consider the effect of work-disincentives inherent in government benefit programs, that may have the effect of depressing income from work.

The pre-transfer poverty rate is based on market income alone. The other poverty rates were derived by consecutively adding income from

(1) social security and railroad retirement;

(2) unemployment compensation, workers' compensation, and veterans' benefits; and

(3) cash welfare.

The official poverty rate is the post-cash welfare rate. *FIGURE 1* shows these four poverty rates for 1975–84.

From 1979–83, the official poverty rate increased each year. It increased partly because government cash benefits failed to offset a rise in the pre-transfer poverty rate. Moreover, *FIGURE 1* shows that the gap between the pre-transfer poverty rate and the official rate narrowed over the 1979–83 period. This indicates that cash benefits not only failed to offset rising pre-transfer poverty, but had a declining impact in reducing poverty. Alternatively, the declining impact of cash benefits on poverty can be seen in TABLE 2, that shows the percent reduction in poverty attributable to cash government benefits.

The percent of the pre-transfer poor removed from poverty by cash benefits declined each year from 1978–84. Much of this trend is attributable to the smaller reduction in poverty

TABLE 1 Distribution of Adjusted Federal, State,and Local Government Cash Benefits Among Families[a] by Quintiles and Year: 1975–1984

Year	*First Quintile*	*Second Quintile*	*Third Quintile*	*Fourth Quintile*	*Fifth Quintile*
1975	26.5%	28.3%	19.1%	14.6%	11.4%
1976	26.8	28.2	19.0	14.0	12.0
1977	27.5	28.8	18.1	13.9	11.8
1978	26.3	28.6	19.4	14.0	11.7
1979	26.9	28.0	19.7	13.7	11.7
1980	25.3	28.2	19.4	14.6	12.6
1981	23.5	28.1	20.5	15.2	12.8
1982	21.2	26.8	21.0	17.1	13.9
1983	20.7	27.5	21.0	17.0	13.7
1984	21.9	27.0	20.9	16.0	14.2

Table prepared by the Congressional Research Service (CRS) based on data from the annual March supplements to the Current Population Survey (CPS), 1976–85.

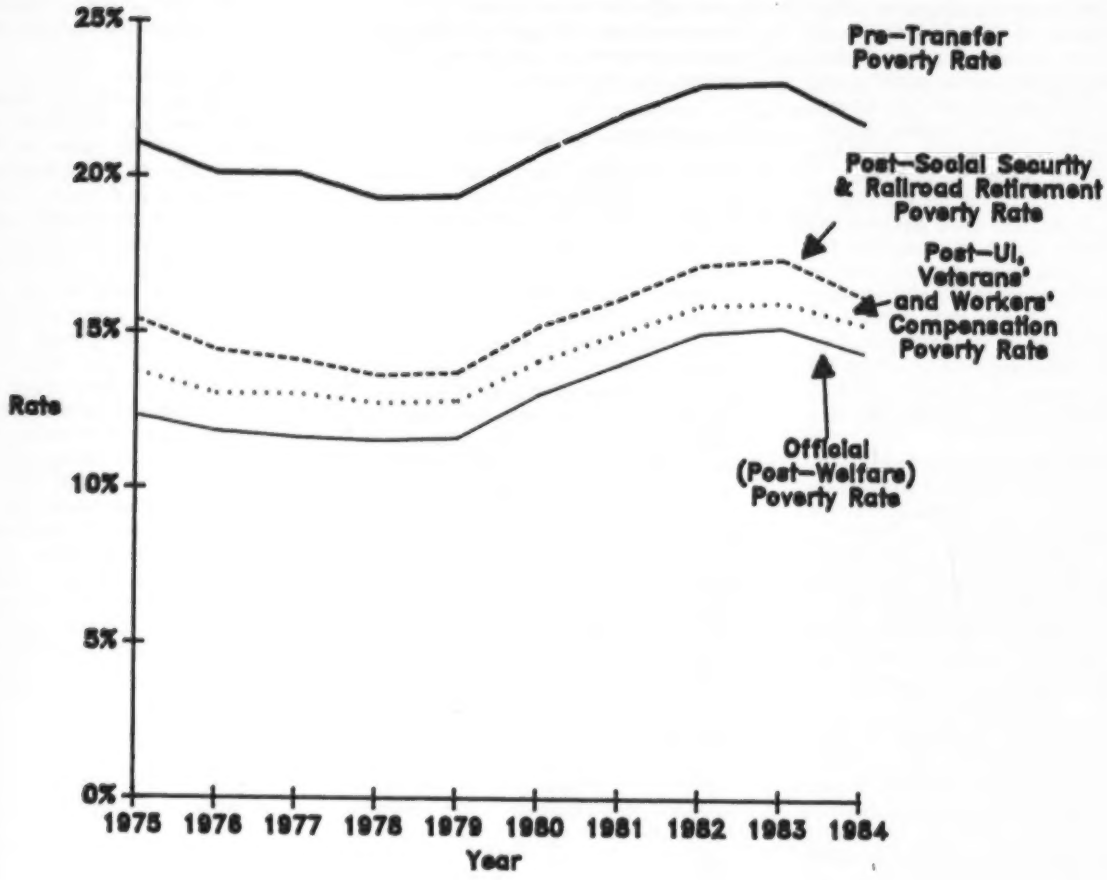
Detail may not add to totals because of rounding.

Quintiles were determined as follows: all families were ranked by the ratio of their family income to the appropriate poverty threshold, from lowest to highest. The 20 percent of the families with the lowest ratios make up the first quintile; the 20 percent of families with the highest ratios make up the fifth quintile.

Cash government benefits were adjusted by the family's poverty threshold. Cash government benefit include: social security and railroad retirement; unemployment compensation, veterans' benefits, and workers' compensation; and cash welfare from AFDC, SSI, and GA programs. This includes benefits from both Federal and State and local government funds. Excluded are Federal employee retirement benefits and all noncash benefits.

[a]Unrelated individuals are considered a family of one.

Figure 1
Poverty Rates for All Persons
Before and After Receipt of Cash Government
Benefits
1975 – 1984



SOURCE: Figure prepared by the Congressional Research Service (CRS) based on data from annual March Supplements to the Current Population Survey (CPS), 1976 to 1985.

caused by receipt of unemployment compensation, workers' compensation, veterans' benefits, and cash welfare. Thus, from 1978–84, those among the pre-transfer poor not removed from poverty by social security or railroad retirement had a decreasing chance of being lifted out of poverty by other cash benefits.

This analysis did not consider the impact of noncash benefits on poverty, because

(1) the official poverty rate is based on cash income alone and

(2) the methods used for assigning a dollar value to noncash benefits are experimental.

The Census Bureau, however, has calculated alternative poverty rates for 1979–84, based on experimental valuation methods for certain noncash benefits. If noncash benefits (such as food stamps, medicaid, and housing aid) were counted when determining a family's poverty status, the poverty rate would be lower. These alternative poverty rates, however, show the same trends as the official poverty rate, rising each year from 1979–83, before falling in 1984. Thus, noncash benefits failed to offset the rise in the official (cash income) poverty rate.

Conclusions.

The dominance of work-related benefits in the income support system result in widely distributed benefits, to families at all levels of the income distribution. At a time when benefit growth was constrained, a growing share of total benefits were going to families at the upper-end of the income spectrum, while those in the poorest families received a smaller share of total cash income support payments. Cash benefits did not offset rising pre-transfer poverty over the 1979–83 period, and lifted decreasing proportions of the pre-transfer poor out of poverty.

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[1]This article is an excerpt from the forthcoming CRS report: Income Support Programs: Changes in Spending, Distribution, and Impact on poverty of government benefit programs. by Gene Falk.

[2]This section draws heavily on the concepts used in two previous CRS studies that examined the distribution of income among families with children. See: U.S. Library of Congress. Congressional Research Service. The distribution of income among families with children. By Kenneth Cahill. CRS. Report No. 85-1017 EPW. Oct. 23, 1985. 24 p. See also: U.S. House of Representatives. Committee on Ways and Means. Chapter V: The relationship of unemployment and income distribution to poverty among children. Children in poverty. Report prepared by the Congressional Research Service (CRS) and Congressional Budget Office (CBO). U.S. Gov. Print. Off. [1985].

TABLE 2 Percentage Reduction in Poverty Numbers of Poor Persons from Adding Cash Government Benefits: All Persons: 1975 to 1984

	Percentage Reduction in the Number of Poor Persons from Adding			
	Social Security and Railroad Retirement[a]	*UI, Veterans' & Workers' Compensation*[a]	*Cash Welfare*[c]	*Cumulative Change: All Benefits*[d]
1975	26.8%	11.3%	10.3%	41.8%
1976	28.1	9.5	9.9	41.4
1977	29.8	7.9	10.9	42.4
1978	29.8	6.3	9.7	40.6
1979	29.4	6.3	9.5	40.1
1980	27.2	6.8	7.9	37.6
1981	26.9	6.4	6.8	36.3
1982	25.1	7.6	5.5	34.7
1983	24.4	8.0	5.1	34.0
1984	25.5	6.0	5.6	33.8

[a]Table prepared by the Congressional Research Service (CRS) based on data from the annual March supplements to the Current Population Survey (CPS).

[a]Percent reduction in the number of poor people when social security and railroad retirement are added to pre-transfer income.

[b]Percent reduction in the number of poor people when unemployment compensation, veterans' benefits, and workers' compensation benefits are added to post-social security and railroad retirement income.

[c]Percent reduction in the number of poor people when cash welfare is added to other money income.

[d]Percent reduction in the number of poor people when total government cash benefits (all three categories shown in the table) are added to pre-transfer income.

World Trade—From Page 5

GATT rules, which means addressing those issues that give agriculture its special status. Any progress in eliminating quantitative restrictions on agricultural trade will require the United States to put its special Section 22 waiver on the bargaining table, and U.S. officials have indicated a willingness to do so. Some analysts, however, believe that it is unlikely that the United States will give up this protection in the face of powerful pressure from domestic farm lobby groups whose commodities are currently protected under Section 22 import quotas. (Quotas are now in effect for peanuts, cotton, milk and various other dairy products.)

The same holds true with regard to the European Community and its use of agricultural export subsidies. The United States has repeatedly insisted that the new round should seek to phase out all export subsidies with only very limited exceptions, such as food aid donations. The European Community's Common Agricultural Policy (CAP), however, is predicated on the use of export subsidies to maintain high domestic farm prices.

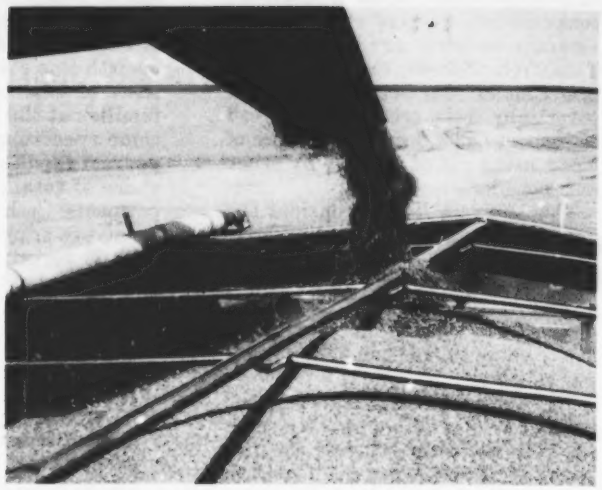
EC officials, who face tremendous political pressure at home to maintain this practice, have continued to resist efforts to have agricultural export subsidies discussed in the new round. Recent press reports indicate that a stalemate between the United States and the EC on this issue threatens to derail the upcoming talks.

Nontariff Barriers

Nontariff barriers to trade, such as licensing procedures, technical and administrative requirements, voluntary export restraint agreements, excessive health and sanitary regulations, import quotas, and variable levies, are widely used to protect agriculture.

Reductions or elimination of nontariff barriers have been difficult to negotiate within the GATT framework for a number of reasons. First, nontariff barriers are not as "transparent" as tariffs, which are clearly visible to all trading partners and, therefore, easier to negotiate. Second, many countries consider their nontariff barriers to be part of their domestic agricultural policy, and therefore not negotiable under GATT. And third, since many nontariff barriers are inconsistent with GATT rules, countries adversely affected by NTBs are unwilling to grant concessions in exchange for the removal or reduction of measures that should not have been imposed by their GATT counterparts in the first place.

The United States has been particularly concerned with EC and Japanese nontariff barriers to U.S. farm exports. According to officials in the Office of the U.S. Trade Representative, the European Community's variable levy is probably the single most important barrier to U.S. agricultural exports. (A variable levy is, in effect, a tax on imports which is constantly being adjusted to make the imported product noncompetitive with the domestic product.) Announced U.S. objectives for the new round in this area include increased market access through the phase-out and elimination of access barriers as well as greater harmonization of animal and plant health-related regulations that have an impact on international trade. Other options to reduce nontariff barriers include bringing bilateral voluntary export restraint agreements under GATT rules and establishing increasing minimum access commitments or maximum self-sufficiency ratios in order to reduce the effects of domestic support policies and ensure market access.



Effects of Domestic Policy on Agricultural Trade

The widely acknowledged link between domestic agricultural policies and trade make the use of adjusting *domestic* policies to facilitate trade an important and contentious issue in multilateral trade negotiations. All of the issues discussed above are tied to this.

Almost all countries pursue agricultural policies that provide some degree of protection to their domestic producers. The United States is no exception. Despite enjoying a clear comparative advantage in many agricultural products over other nations, the United States still finds it necessary to employ a variety of measures that protect domestic producers from foreign competition in both U.S. and third country markets, as well as to operate a number of programs to support farm income and prices, and to subsidize farm exports.

Many other countries, without the advantages enjoyed by the United States, also find it necessary to employ domestic policies that have hindered free trade. The EC and Japan have domestic policies that particularly tend to distort trade. The EC's CAP both significantly limits imports and heavily subsidizes exports. Japan's agricultural policy, however, primarily limits access to Japanese markets in order to maximize self-sufficiency and maintain farm income at a level equal to urban income.

Once these types of programs and policies are in effect they are extremely difficult to reduce or remove. A case in point was the Reagan Administration's attempts in both 1981 and 1985 to reduce the Federal Government's support of agriculture. Opponents countered that the safety net provided by Federal support was essential to protect the declining farm sector and were successful in maintaining a relatively high degree of Government support to farmers. The political strength of the farm sector in the United States, Japan, the EC as well as in other GATT countries will continue to make it difficult to reduce the trade effects of domestic farm programs.

There are, however, some indications that progress in this area of negotiations may be possible. First, there appears to be a growing appreciation on the part of major trading countries that it is the trade effects of domestic policies—and *not* the domestic policies themselves—that would be subject to negotiation. Although some modification of domestic policies may have to result, neither the

objectives of the domestic policies, nor the instruments used, would have to be replaced on a wholesale basis.

Second, there has been some, albeit limited, progress in strengthening GATT provisions on export subsidies. The next logical step may be to strengthen GATT rules and principles with respect to domestic subsidies and other trade-affecting policies. In fact, if the United States wants to address export subsidies, it can expect to have a number of its own domestic subsidies, such as target prices and marketing loans, put on the bargaining table.

Finally, the strongest factor encouraging reforms in domestic agricultural policies is the growing budgetary cost of these programs, especially in the United States and the European Community. Efforts to reduce the cost of domestic support programs may not only result in reduced budget deficits, but also in reduced trade distortions.

How might these reforms be accomplished? Proposals include: (1) developing international arrangements for consultation among agricultural and trade policymakers on the trade effects of domestic agricultural policies; (2) negotiating international commodity agreements with economic provisions (*e.g.*, pricing and/or market sharing or stocking provisions); and (3) reducing or binding the level of price support and phasing out over time the protection provided by domestic policies that affect import requirements or export availabilities.

GATT Dispute Settlement Procedures

Articles XXII and XXIII of the GATT provide procedures for consultation and settlement of disputes between GATT members in all areas of trade, including agriculture. While the specific mechanisms and time limits vary, depending on the Code or Article under which a dispute is filed, common steps include:

(1) provisions for bilateral or multilateral consultations seeking to reach a mutually satisfactory solution without resorting to dispute settlement;
(2) the right of any signatory to a panel of 3 to 5 impartial experts from countries not party to the dispute, which reviews the dispute and makes findings of fact or law; and
(3) submission of panel findings to the GATT council for review and approval and possible authority for retaliatory action.

While the GATT dispute settlement procedure covers all trade areas, it is in the area of agricultural trade disputes that the process has come under increasing fire. Criticism centers around two issues: (1) the time it takes to settle a dispute (a U.S. wheat flour case filed in the GATT in 1981 has not yet been settled, at least to the satisfaction of U.S. interests); and (2) the consensus and nonbinding nature of the decision-making process, which means the decisions can be easily blocked by a party to the dispute. Thus, both the EC and the United States have blocked GATT panel decisions that would have been unfavorable to their respective interests.

The present problems with the GATT procedure for settling agricultural trade disputes are, in part, a manifestation of the continued agricultural trade problems between the United States and the EC, particularly in the area of export subsidies. According to the U.S. International Trade Commission, all subsidy cases brought before GATT since 1975 have concerned agricultural commodities. Almost 40 percent of all GATT cases since 1948 have been agricultural disputes. Nearly 70 percent of these cases were brought against the EC.[1]

In many instances, the complainant was the United States, which has participated in more dispute settlement cases than any other GATT member. While strengthening the dispute settlement process should make decisions more timely, unburdening the system by resolving the fundamental trade differences between the United States and the EC should result in an even more effective dispute settlement process.

The United States has stated that one of its objectives in the new round is the improvement of the dispute settlement procedures. Proposals include significantly shortening the time necessary to arrive at a decision, requiring binding arbitration, and strengthening the code of conduct to make legal obligations thereunder more precise, which should reduce the number of disputes brought to the GATT for resolution.

Prospects for Success

The United States has taken the lead in calling for the new round of multilateral trade negotiations with a major objective of bringing agriculture more fully under GATT rules. Agreement on a new round, with agriculture featured on the agenda, reflects a continuing commitment on the part of GATT members to work toward further liberalization of world agricultural trade—as well as a recognition that GATT, as it is presently structured, is inadequate to that task.

Despite agreement among GATT members of these fundamental points, prospects for successfully addressing critical issues in agriculture are less than promising, given the probable intense resistance in many countries by politically powerful domestic farm groups who benefit under the current system. This holds true particularly in the United States, the European Community, Japan which are traditionally the key players in MTNs.

Increasing market access by lowering tariff and nontariff barriers to farm products, and reducing or eliminating reliance on export subsidies will necessitate painful readjustment in a number of agricultural economies around the world, including in this country. While always difficult, this readjustment over the next several years will be an especially formidable task under the current depression in the U.S. and world agricultural markets. It is ironic that the same stresses and strains that have prompted a new round of MTNs also cloud the chances for progress in opening up world agricultural markets.

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[1]Review of effectiveness of trade dispute settlement under the GATT and the Tokyo Round Agreements, USITC, Pub. 1793, Dec. 1985, pp. 50–55.

Votes Seats—From Page 9

gue that goals of compactness, respecting political boundaries, and avoiding strange shapes had to be sacrificed to honor the principle of one person, one vote. Justice Powell in his concurrence and dissent, however, makes a case for using traditional gerrymandering measures. He writes:

> The most important of these factors are the shapes of voting districts and adherence to established political subdivision boundaries. Other relevant considerations include the nature of the legislative procedures by which the apportionment law was adopted and the legislative history reflecting contemporaneous legislative goals. To make out a case of unconstitutional partisan gerrymandering, the plaintiff should be required to offer proof concerning these factors, which bear directly on the fairness of a redistricting plan, as well as evidence concerning population disparities and statistics tending to show vote dilution. No one factor should be dispositive.[31]

Adherence to these principles may not necessarily result in fairer districts. Honoring political subdivision boundaries may be at odds with the "one person, one vote" rule. Geographic features such as lakes, rivers, and mountains may suggest that compactness rules are inappropriate. Strange shapes may come about as a result of honoring political boundaries because many political subdivisions are oddly shaped.

The data presented in this article illustrate that if the Supreme Court chooses to hear more cases considering gerrymandering, it will have to consider a multiplicity of factors. The Court's one person, one vote rulings are based on a fairly simple concept—one person's vote should be equal in weight to another person's—but it took the Court more than twenty years to refine that concept. Gerrymandering cases will be much more difficult to decide because "objective" measures may not be clear enough to establish a constitutional principle so as to allow the Court to avoid having to consider the legislative history of each plan in order to establish intent.

All the proposed methods of measuring gerrymandering mentioned in this article (the votes-seats gap, swing ratio, or a more "traditional" measure) even if refined in the future, may never be more than indicators of possible gerrymandering. Thus any future gerrymandering cases before the courts will probably have to be judged on a complex case by case basis.

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[1]Once the complete, official, 1984 election returns became available, it was apparent that initial reports overstated the votes-seats disparity. The final figures showed the Democratic Party with a total of 43,413,247 votes for its House candidates, compared with 38,921,022 for the Republicans. The actual proportional share of the total major party vote for each party in 1984 was 52.7 to 47.3 in favor of the Democrats rather than a 50–50 tie. Thus the "votes-seats" gap favored the Democrats—who received 58.2 percent of the seats with 52.7 percent of the vote—by a margin of 5.5 percent rather than the 8 percent as originally reported. Source: Popular vote cast for Democratic, Republican, and other candidates for the House of Representatives in 1984. [by] Joseph B. Gorman. Congressional Research Service. [typed report] May 13, 1985. p. 1.

[2]"Gerrymandering" is a term which describes the practice of drawing election district boundaries that favor one party or group more than another.

[3]The National Gerrymander. Wall Street Journal, Nov. 26, 1984, p. 34.

[4]The legal basis for this case was discussed in a January 1985 CRS Review article by Thomas M. Durbin. See Constitutionality of Political Gerrymandering: Davis v. Bandemer. Congressional Research Service review. January 1986. p. 5–6.

[5]Davis v. Bandemer, 603 F. Supp. 1484 (Three-judge court: S.D. Ind. 1984).

[6]Davis et al. v. Bandemer et al. Supreme Court Docket No. 84–1244. Justice White's opinion, June 30, 1984, Slip op. at p. 24.

[7]Ibid., p. 20.

[8]Ibid., p. 18.

[9]Ibid., p. 27.

[10]Ibid.

[11]Ibid., Justice O'Connor's concurrence, p. 4.

[12]Ibid., Justice White's opinion, p. 27.

[13]Ibid., Justice O'Connor's concurrence, p. 4.

[14]Ibid., Justice Powell's Concur/Dissent, p. 11, note 10.

[15]Ibid.

[16]Ibid., Justice White's opinion, p. 27, note 17.

[17]Ibid., Justice White's opinion, p. 11.

[18]Gordon E. Baker and Bernard Grofman. Court should plunge deeper into gerrymandering thicket. Los Angeles Times, July 15, 1986, Pt II, p. 5.

[19]With the exception of the 1984 data which are based on Popular vote cast for Democratic, Republican, and other candidates for the House cited above, the data are from "Statistics of the Congressional Election" published by the Clerk of the House after each election.

In some States vote totals are not tallied for candidates who run unopposed. This factor plus a tendency toward lower turnout in races where there is no opposition slightly overstates the vote-seats gap advantage that the Democratic party enjoys because during this period the majority of unopposed races have been won by Democrats.

[20]James DeNardo. Turnout and the Vote: The Joke's on the Democrats. The American Political Science Review. Vol. 74, June 1980. p. 409.

[21]Raymond E. Wolfinger, Steven J. Rosenstone. Who Votes? Yale University Press, New Haven. 1980, p. 109.

[22]These data were computed by CRS Specialist Royce Crocker using a machine readable copy of the 1984 American National Election Study which was conducted by the Inter-University Consortium for Social and Political Research. This study differs from the 1972 study because the persons in the survey were checked against administrative records in the States to determine if they actually voted, rather than if they said that they had voted.

[23]These figures were computed from a data set of House election returns on the Library's central computer.

[24]Data from the 1984 American National Election Survey show 37.4 percent of those surveyed identified themselves as Republicans, and 42.9 percent identified themselves as Democrats. Source: see note 22.

[25]M.G. Kendall and A. Stuart. The law of the cubic proportion in election results. British Journal of Sociology, Vol. I, No. 3, Sept. 1950. p. 183.

For example, if the vote split between parties was 50/50 the cube of results of the division (1) would be 1. Thus one would expect a 50/50 split in votes to result in a 50/50 split in seats. If the vote split was 56/44, however, the result of the division would be 1.2727, the cube of which is 2.0616. Thus one would expect the winning party to gain about 2 seats for every one the losing party receives.

[26]See Edward R. Tufte. The relationship between seats and votes in two-party systems. American Political Science Review, Vol. LXVII, June 1973, pp. 544–546.

[27]Richard G. Niemi. The relationship between votes and seats: The ultimate question in political gerrymandering. U.C.L.A. Law Review, v. 33, Oct. 1985, p. 194.

[28]Ibid., p. 195.

[29]Tufte. pp. 546–547.

[30]Ibid., note 23.

[31]Davis v. Bandemer. Concur/Dissent of Justice Powell, p. 13.

zardous—From Page 14

n addition, requiring documentation could aid Federal forcement officials in detecting and penalizing npanies that ignore this Federal training regulation. wever, such a requirement would add to the Federal perwork" demands already placed on this industry.

Another concern raised by H.R. 4612 is the vagueness its current provision that would require drivers trans- rting hazardous materials to complete successfully a itten examination to be given by the States. Does the rrent bill language mean that a driver must receive a sing grade or does it mean that he must simply finish examination? Should the test be open book? Would current Federal examination be used or would the tes develop their own tests?

The last concern pertains to the "carrot and stick" ap- oach regarding State licensing of drivers transporting zardous materials that is incorporated into H.R. 4612. r a variety of reasons, this approach may fail to achieve intended purpose. Some States may decide that the sts of implementing this regulatory program would not worth the financial benefits that MCSAP provides. e possibility of losing MCSAP funds would have essen- lly no leverage on the eight or so States that do not rrently participate in the MCSAP program. In addi- n, other States may consider this approach an welcomed intrusion into their State licensing proce- res and policies.

It should be noted that Congress may substantially end this bill as it is further deliberated.

ption #3—Emergency Response Information

Another approach toward achieving some of the objec- ves of increased training might be to increase the availa- ity to all transportation personnel of appropriate emer- ency response and chemical hazards information. To plement this approach, Congress could direct the Sec- tary of Transportation to issue regulations that would:

Require pertinent emergency response telephone numbers to be listed on all shipping papers required pursuant to Title 49 of the *Code of Federal Regulations;*

Require the U.S. Department of Transportation's *Emergency Respose Guidebook* (ERG) (or a comparable document that is approved by the Secretary) to accompany most, if not all hazardous materials shipments; and

Require the U.S. Department of Transportation's *ERG* (or a comparable document that is approved by the Secretary) to be located within easy access by and available to workers at all railyards, airports, land and marine terminals, regulated warehouses, loading and unloading docks, and shipper facilities that transport or are involved in the transportation of hazardous materials.

Portions of this approach are incorporated into H.R. 12 and similar concepts are being considered at DOT. egislation incorporating this approach could allow DOT e flexibility to determine the extent of coverage of ese regulations. For example, DOT specialists might ed to determine the costs and benefits of exempting nall portions of the industry, such as farmers transport- g fertilizers; trucks transporting new cars which contain zardous materials in their batteries, gas tanks, and air gs; and refrigeration service trucks transporting freon. As it is currently written, H.R. 4612 does not provide is flexibility. In addition, legislation incorporating this proach might also direct DOT to issue regulations that ould be designed to ensure that both drivers and workers know how to use the *ERG* (or a similar document), understand its limitations, and understand their appropriate role and functions in emergency situations. H.R. 4612 as originally introduced, does not require this knowledge.

Regardless of which option is eventually chosen, the importance of appropriate and periodic training for both workers and drivers should be clear. Likewise, DOT's role in ensuring proper training deserves continued oversight.

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[1]For purposes of clarity, it is important to define some of the terms in this article:

Training includes a variety of activities which are designed to satisfy formal training specifications, regulations that require specific knowledge or information, and other testing requirements. DOT uses all of these strategies in its regulatory regimen.

Drivers include personnel actually transporting shipments in the highway mode, e.g., truck drivers. Some drivers perform "worker" functions in addition to their driving responsibilities.

Workers include employees whose functions affect the safe highway transportation of hazardous materials under active shipping documents that indicate an intended destination away from the point at which the materials are offered for transportation. Workers perform a variety of tasks including loading, blocking, and bracing operations. Workers also prepare hazardous materials and packages containing hazardous materials for transportation. It would be DOT's task to determine how far back in the system workers should be regulated for purposes of the Hazardous Materials Transportation Act.

[2]DOT's regulations are detailed and numerous and are only selectively discussed and analyzed here; accordingly, this article is not intended to serve as a replacement for a reading of the DOT regulations. Personnel working in this industry or affected by the DOT regulations should not rely on this article, but should consult DOT and other appropriate regulations directly.

[3]DOT regulations state that the carrier must make the regulations effective and that the carrier must instruct his employees thoroughly on the regulations. DOT regulations also state that each person who offers hazardous materials for transportation must instruct each of his officers, agents, and employees having any responsibility for preparing hazardous materials for shipment as to the applicable regulations.

[4]This finding is not intended to suggest that DOT should require all workers and drivers to have the same training, knowledge, and understanding as do either chemists or emergency response personnel/ paramedics. but, rather, it suggests that DOT might want to consider what constitutes training and understanding appropriate for the responsibilities, tasks, capabilities, etc., of various workers and drivers. For example, DOT might consider the feasibility and appropriateness of requiring various types of personnel to have different levels of knowledge and be tested or certified in such areas as: 1) use of the Emergency Response Guidebook (ERG); 2) limitations of the ERG; 3) characteristics and risks associated with different hazard classes; and 4) applicable DOT regulations.

[5]As further discussed in our report, these workers perform functions, such as loading, blocking and bracing, that can have a major impact on safety.

[6]Some States impose their own testing requirements.

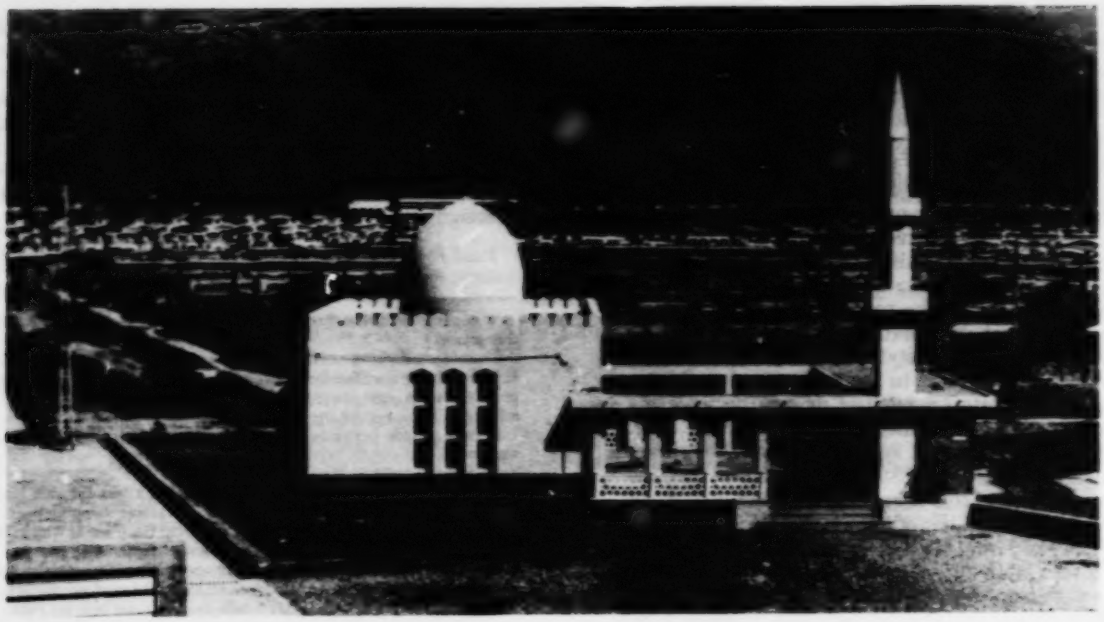
[7]Drivers, some of whom perform "worker functions," would have to pass various state licensing processes.

See also:

1. U.S. Congress. House Committee Energy and Commerce and House Committee on Government Operations. Subcommittee on Telecommunications, Consumer Protection, and Finance; Subcommittee on Commerce, Transportation and Tourism; and Subcommittee on Government Activities and Transportation. Joint Hearings on H.R. 4612, Hazardous Materials Transportation Safety Amendments of 1986. July 16, 1986. [To be published]

2. U.S. Congress. Office of Technology Assessment. Transportation of Hazardous Materials, OTA-SET-304 (U.S. Govt. Print. Off., Washington, D.C. July 1986). 265 p.

3. U.S. Department of Transportation. Research and Special Programs Administration. Annual Report on Hazardous Materials Transportation. Calendar Year 1984. 68 p. and appendices.



A mosque in Islamabad, Pakistan, and (below) Karachi harbor. See "Pakistan: U.S. Foreign Assistance Facts" Issue Brief 85112. It's one of a series of issue briefs on U.S. foreign aid to various foreign countries prepared by the Foreign Affairs and National Defense Division. (See the August CRS Update for a complete listing.)

Weekly on Thursday	INTRODUCTORY BRIEFING ON CRS RESOURCES, SERVICES, AND FACILITIES FOR MEMBER AND COMMITTEE STAFF. Room 209, James Madison Building. 10:00 to 11:30 a.m. Open to permanent Member and Committee staff only; not open to interns. Coordinator, Pat Clark, 287-6464.
Weekly	SCORPIO. Introductory training classes available at CRS. Individual refresher or advanced session available at either CRS or your congressional office. Open to Member and Committee staff. Call 287-6447 for an appointment.
September 9-11	DISTRICT/STATE STAFF INSTITUTE. Designed to acquaint District and State staff with CRS services and to improve skills in casework and in working with government agencies. Supported by the United States Senate and the House of Representatives. Held in the James Madison Building, The Library of Congress. Coordinator, Jill Ziegler.
September 9	INFORMATION RESOURCES AND SERVICES FOR THE COMMUNITY AND INDIVIDUAL CITIZEN. A seminar designed to explore local or community-based information resources available to individual citizens and community groups. 1:15 to 3:00 p.m., Mumford Room, 6th floor, James Madison Building, The Library of Congress. Coordinator, Robert Chartrand.
September 10	FOUNDATION GRANTS--LARGE FOUNDATIONS WITH BOTH NATIONAL AND INTERNATIONAL PROGRAMS: Helping Your Constitutent Find Resources. A seminar for the congressional staffer describing available foundation funding, how to find information about it, and when the congressional staffer might suggest that a constituent look for foundation funding. 1:30 to 3:30 p.m., Mumford Room, 6th floor, James Madison Building, The Library of Congress.

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RICHARD M PREECE

UNITED STATES-IRAQI RELATIONS

American Petroleum Institute

Iraq's Satan

On November 26, 1984, full diplomatic relations were resumed between the United States and Iraq following a lapse of 17 years after Iraq severed official ties during the June 1967 Arab-Israeli war. This fragile modus vivendi reflects in large measure a coincidence of interests brought about by recent events in the Persian Gulf region, most notably the Iranian Revolution and the subsequent Iran-Iraq war. It is linked to a number of issues that affect U.S. strategic, political, and economic concerns in the region. The restoration raises a number of policy questions of interest to the Congress, foremost among which is the potential effect of the U.S.-Iraqi relationship on near- and longer-term U.S. regional interests.

The Congressional Research Service Review
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U.S. Interests in the Gulf Region

U.S. interest in Iraq stems largely from broader American regional requirements in the Persian Gulf region. For the United States, the political, economic, and strategic significance of the Gulf derives primarily from the region's petroleum resources (more than half the world's proven crude oil reserves). The region also is of importance as a key strategic crossroads and because of its major commercial relations with the United States, the West European allies, and Japan.

Fundamental U.S. objectives in the Gulf include: continued assured access to the region's oil resources for the Western industrialized countries; continued use of the region's communications, land, sea, and air routes, and transit facilities; maintenance and strengthening of economic ties with individual states; and prevention of the establishment by an external adversary power—in particular, the Soviet Union—of a predominant political or military presence in the region. An associated objective, stemming from the U.S. commitment to Israel's survival, is seeking support from regional states for the basic American interest in resolving the Arab-Israeli conflict which affects virtually every issue of major U.S. concern in the Middle East.

From the U.S. perspective, Iraq occupies a strategic position in the region that derives from a geographical location which combines the following elements:

with a population of 15.5 million, Iraq is the second most populous (after Iran, with 45.2 million) among the states of the Gulf littoral;

with a mere 30-mile coastline at the head of the Gulf, Iraq has limited access to Gulf waters resulting in economic and strategic disadvantages; at the same time, such access makes it an operative in Gulf affairs;

it is the site of considerable oil reserves;[1]

it shares borders to the south with the traditional, oil-producing Arab states of Kuwait and Saudi Arabia;

while Iraq is non-contiguous with Israel, it has in the past taken an intransigent "hard-line" position against the Jewish state, and it shares borders to the west with the "front-line" Arab states of Jordan and Syria;

it shares borders to the north and east with the non-Arab, Northern Tier states of Turkey and Iran which lie along the southern Soviet frontier; and,

it is physically the closest Arab state to the Soviet Union.

Historically, Iraq has sought a leadership role in Middle Eastern affairs. Geographical, economic, and ideological factors have tended to encourage an activist foreign policy on the part of the regime in power in Baghdad, in part stemming from perceptions of vulnerability from both internal and external sources. Since the termination of the monarchy in 1958, the Iraqi Republic has represented a significant force of secular radicalism in the region that has been supported by Soviet military and economic assistance; but it is a force that continues to face a number of inherent constraints.

Since 1980, Iraq has been engaged in conflict with the Islamic Republic of Iran, the course and outcome of which will likely affect the energy economics of the West and prospects for political stability in the Gulf region. The United States has maintained an official neutral stance in the war. In the context of the conflict—a war of attrition currently in its seventh year, the preservation of Iraq's territorial and political integrity is in the U.S. interest.

Some consider that Iraq is important to U.S. interests in that it shields the vulnerable Gulf Arab states from Iranian military power and coercion and restrains Iranian subversive ambitions. Should Iraq collapse, the installation of a revolutionary Shi'ite regime in predominantly Muslim Baghdad would raise the potential for increased instability in the Gulf Arab states and the possibility of an Iranian-Syrian Axis which could threaten not only the Gulf region but also Jordan, Israel, and U.S. interests in the Eastern Mediterranean. Destabilization would tend to open opportunities for increased Soviet influence in the region.

At present, neither Iraq nor Iran appears to possess the capability of inflicting a decisive military victory over its adversary. International efforts since 1980 at mediation between the two combatants continue to founder and many observers consider that a negotiated settlement is unlikely so long as the Iranian leadership under Ayatollah Khomeini retains power.

Successful mediation culminating in a cease-fire and settlement of the conflict would appear to be compatible with the Western interest of stability in the region. The United States, however, has limited leverage to effect progress in this regard. U.S. policy concerns currently center on the possibility that Iraq, despite moves on the part of its supporters to sustain its economic and military capacities, ultimately might collapse as a result of the war of attrition to the detriment of American regional interests.

At the same time, there remains the possibility that the conflict might expand beyond its present confines to threaten friendly regional states and the availability of their vast petroleum resources.

The United States has an interest in preventing Iranian revolutionary or military expansion in the Gulf region. An Iranian "hegemony" over the Gulf oil-producing states could decisively change or place pressure on the world oil markets, particularly should there be a tightening of these markets in the future.

Iranian Islamic expansionism carries the potential for destabilizing the Gulf region by jeopardizing the flow of oil, lines of communication, and friendly Arab governments. The interest in containing Iran's regional position in many respects conflicts with the U.S. interest in an Iran sufficiently strong to resist Soviet power and

control.[2] These two, sometimes contradictory interests would suggest a careful balance between Soviet-Iranian and Iranian-Arab problems in U.S. policy decisions.

U.S.-Iraqi Relations

U.S.-Iraqi relations have followed a mercurial course over the past 40 years. In the immediate post-World War II period, U.S. policy toward Iraq in large measure deferred to the United Kingdom which retained a significant influence in the country. Nevertheless, mutual concern during the early 1950s over the Soviet threat to the Middle East generated cooperation with the United States.

Iraq accepted American military assistance in April 1954 and, in February 1955, joined the U.S.-sponsored Baghdad Pact, in association with Turkey, Iran, Pakistan, and the United Kingdom. Iraq's entry into this mutual defense and cooperation agreement was heavily criticized by other Arab states as introducing great-power rivalries and the Cold War into the Middle East and dividing the Arab world.

In the wake of the July 1958 revolution which terminated the Iraqi Hashemite monarchy, Iraq withdrew from the Baghdad Pact in March 1959; in May of that year, it cancelled the 1954 military assistance agreement with the United States, thereby disassociating itself from the Eisenhower Doctrine. The new regime's efforts to assert a policy of non-alignment and independence from Western influence were welcomed by the Soviet Union.

Diplomatic relations with Russia were restored in 1958 and the Soviets were soon supplying Baghdad with arms and extending economic credits. Relations between the United States and successor Iraqi regimes deteriorated during the 1960s; indications of any rapprochement were short-lived, largely as a result of U.S. support for Israel. In June 1967, Baghdad broke diplomatic relations with the United States.

Diplomatic ties between the United States and Iraq remained suspended until November 1984, although relations at commercial and technical levels continued through the two countries' respective interests sections maintained in Washington and Baghdad. During the 1970s, Iraq was not included in U.S. considerations of constructive involvement in regional policy, in part because of:

U.S. support for Israel during the 1973 Arab-Israeli conflict;

the U.S. relationship with Iran under the Shah;

Iraq's refusal to accept a negotiated Arab-Israeli settlement within the context of U.S. Security Council Resolution 242;

Iraq's opposition to the Sadat initiative and the Egyptian-Israeli peace treaty;

as well as such issues as Iraqi support for terrorist activities, for subversion in Gulf Arab states, and its record on human rights.

In addition, Iraq had formalized its military-diplomatic relationship with the Soviet Union in April 1972 with the signing of a 15-year Treaty of Friendship and Cooperation.

The Iranian Revolution of 1979 posed a common threat to U.S. and Iraqi interests. While Washington was critical of Iraq's invasion of Khuzestan in September 1980, the scope and frequency of interaction between Washington and Baghdad expanded following the hostage crisis in Tehran.

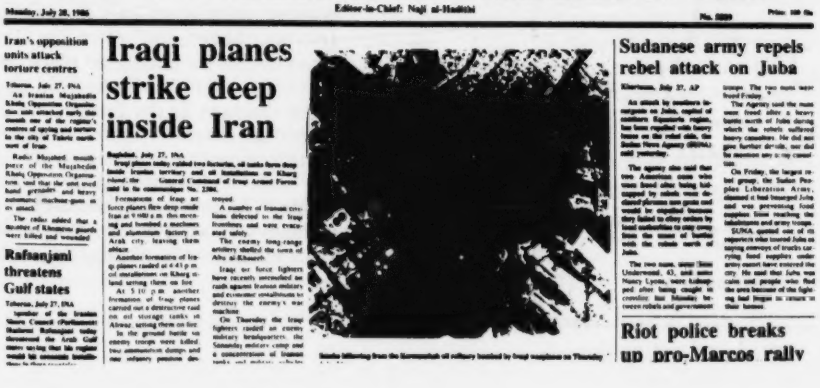
As Iraq faced growing military and economic difficulties in the Iran-Iraq conflict in late 1981 and during 1982, President Saddam Husayn on several occasions expressed his interest in expanding diplomatic contacts with Washington. The United States responded in kind. In February 1982, Iraq was removed from terrorism list restrictions established by the 1979 Fenwick amendment to the Export Administration Act.[3]

From December 1982, the U.S. Department of Agriculture Commodity Credit Corporation (CCC) agreed to guarantee credit for sales of agricultural commodities to Iraq. Baghdad continued to indicate that, under certain conditions, it would be willing to moderate its previously rejectionist position with respect to Israel. During a meeting in Baghdad between Saddam Husayn and a U.S. Congressman on August 25, 1982, the Iraqi President expressed an acceptance of Israel's right to exist.[4]

A National Security Council study in October 1983 was reported to have concluded that U.S. interests in the region would not be served should Iraq collapse in the war of attrition. At the same time, it maintained that there was little the United States could do directly to aid Iraq, given the U.S. policy of neutrality in the conflict.[5] It stated that, in order to maintain its ability to continue the war, iraq's primary needs were economic assistance and improvement of its officer corps morale.

As a result, the Reagan administration reportedly encouraged Gulf Arab states to increase, or at least maintain, their financial support for Iraq. In addition, the Administration conducted diplomatic efforts aimed at limiting the flow of arms from third countries to Iran. Washington gave support to Iraq's position that the conflict must be concluded through negotiated, rather than military means.

Continued on P. 21



THE BAGHDAD OBSERVER

Monday, July 28, 1986 — Editor-in-Chief: Najl al-Haditki

Iran's opposition units attack torture centres

Tehran, July 27, INA

An Iranian Mujahedin Khalq Opposition Organization unit attacked early this month one of the regime's centres of spying and torture in the city of Tabriz northwest of Iran.

Radio Mujahed mouthpiece of the Mujahedin Khalq Opposition Organization said that the unit used hand grenades and heavy automatic machine-guns in its attack.

The radio added that a number of Khomeini guards were killed and wounded.

Rafsanjani threatens Gulf states

Tehran, July 27, INA

A member of the Iranian Islamic Council (Parliament) Hashemi Rafsanjani today threatened the Arab Gulf states saying that his regime would hit economic installations in these countries

Iraqi planes strike deep inside Iran

Baghdad, July 27, INA.

Iraqi planes today raided two factories, oil tanks farm deep inside Iranian territory and oil installations on Kharg island the General Command of Iraqi Armed Forces said in its communique No. 1286.

Formations of Iraqi air force planers flew deep inside Iran at 9 AM p.m. this morning and bombed a machines and aluminium factory at Arak city, leaving them ablaze.

Another formations of Iraqi planes raided at 4.45 p.m. oil installations on Kharg island setting them on fire.

At 5.10 p.m another formation of Iraqi planes carried out a destructive raid on oil storage tanks at Ahwaz setting them on fire.

In the ground battle on enemy troops were killed, two ammunition dumps and one military position de-

stroyed.

A number of Iranian civilians defected to the Iraqi frontlines and were evacuated safely.

The enemy long-range artillery shelled the town of Abu al-Khasib.

Iraqi air force fighters have recently succeeded in raids against Iranian military and economic installations to destroy the enemy's war machine.

On Thursday the Iraqi fighters raided an enemy military headquarters the Tuesday military camp and a concentration of Iranian

Smoke billowing from the Kermanshah oil refinery bombed by Iraqi warplanes on Thursday

Sudanese army repels rebel attack on Juba

Khartoum, July 27, AP

An attack by southern insurgents on Juba, capital of southern Equatoria region, has been repulsed with heavy losses on the rebel side, the Sudan News Agency (SUNA) said yesterday.

The agency also said that two American nuns who were freed after being kidnapped by rebels were declared persona non grata and ordered by expelled because they failed to obey orders by local authorities to stay away from the scene of battles with the rebels north of Juba.

The two nuns, sister Rose Underwood, 43, and sister Nancy Lyons, were kidnapped after being caught in crossfire last Monday between rebels and government troops. The two nuns were freed Friday.

The Agency said the nuns were freed after a heavy battle north of Juba during which the rebels suffered heavy casualties. He did not give further details, nor did he mention any x-ray casualties.

On Friday, the largest rebel group, the Sudan People Liberation Army, announced it had besieged Juba and was preventing food supplies from reaching the inhabitants and army troops.

SUNA quoted one of its reporters who toured Juba as saying convoys of trucks carrying food supplies under army escort have entered the city. He said that Juba was calm and people who fled the area because of the fighting had begun to return to their homes.

Riot police breaks up pro-Marcos rally

PARENTAL LEAVE: the FAMILY and MEDICAL LEAVE ACT

Families in which both parents hold jobs and care for small children have now largely replaced the earlier model in which men went out to work and women were full-time homemakers. According to recent (1984) Census data, the composition of the work force and the economy of families have changed substantially over the last three decades. As a result, interest has heightened in the standardization of benefits to assist those balancing both employment and family responsibilities.

LESLIE W. GLADSTONE

What the Census data show is a labor force that is now 44 percent female, with married women with young children comprising the majority of new entrants. Currently, more than 80 percent of working women are in their prime childbearing years (ages 18–44) and 65 percent of all American women in this age group are in the labor force. Less than 10 percent of families are made up of a married couple with children where the husband is the sole provider, and thus most children in the United States have working parents. In addition, the proportion of single-parent households has been increasing due to the high rate of divorce and the growing frequency of out-of-wedlock births.

Legislation pending in the 99th Congress, the "Family and Medical Leave Act" (H.R. 4300/S. 2278), would require employers to grant parental or family leave to parents to care for a new-born, newly adopted, or seriously ill child and medical or disability leave to temporarily disabled workers, including those disabled because of pregnancy. Although varying leave benefits applicable to parental and temporary disability needs are available to many American workers through public and private employment benefit plans, the United States is the only major industrialized country that does not have a national policy standardizing family-related benefits. At issue is the question of whether such benefits in the United States should be mandated by law or left to individual employers and to the collective bargaining system, as is the current practice.

While many U.S. employers offer employment-related leave benefits which are applicable to pregnancy and childcare—in the form of annual leave, temporary disability or sick leave, or leave without pay—no national policy mandates standard family-related benefits for all workers. By contrast, at least 75 other countries, including all other Western industrialized nations, have policies requiring minimum family-related benefits.

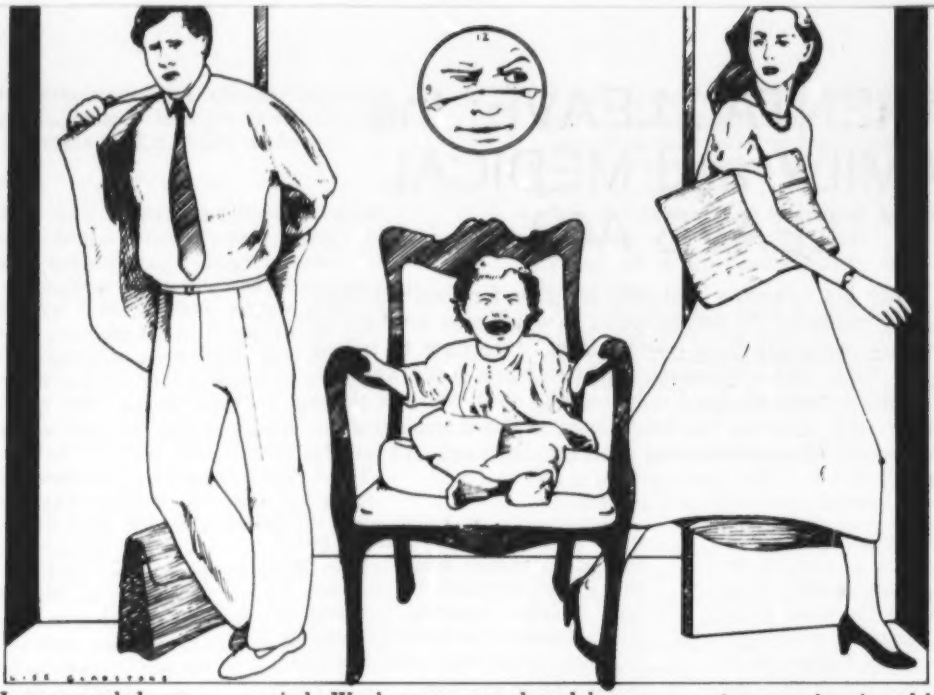
In other countries, these benefits typically include maternity leave for a specified time before and after the birth of a child, job protection during maternity leave, and wage replacement or a cash benefit. In addition, some countries provide a paid or unpaid parental leave, a leave granted for child care which is available to either parent and unrelated to the physical disability resulting from childbirth.

This dissimilarity in employment policies between the United States and other countries has been attributed by some researchers to differences in philosophic and cultural attitudes with regard to methods of providing protective benefits. In most countries, such benefits are an entitlement provided through a national social security system, while maternity and parental benefits in the United States have been developed primarily in the private sector, voluntarily, and on an *ad hoc* basis, as well as through labor-management agreements.

While family-related policies in other countries are directed toward women primarily and are intended to address broad issues related to maternal and child health, Federal policy in the United States has been directed toward the prohibition of discrimination in the provision of employment-related benefits. Employment benefits in the United States are governed by the requirements of Title VII of the Civil Rights Act of 1964, as amended by the Pregnancy Discrimination Act of 1978.

Leslie W. Gladstone is an analyst in American national government, Government Division.

(For further discussion of maternity and parent leave policies in the United States and overseas, see CRS Report no. 85–148 GOV. "Maternity and Parental Leave Policies: a Comparative Analysis.")



Under Title VII, as amended, employers are not required to provide specific benefits of any kind, but if employers do provide benefits, they may not discriminate on the basis of race, color, religion, sex, or national origin, or on the basis of pregnancy. (Federal, State, and local governments are covered by these statutes, as are private employers with 15 or more employees.)

The legislation pending in the 99th Congress would create two kinds of employee leave benefits that are sex-neutral (in conformance with Title VII). The leaves would be unpaid, although either the employer or the employee could substitute paid leave for part of the unpaid leave. The establishment of a parental benefit is intended to address the issue of limited availability of dependent care at a time when the number of mothers in the labor force with pre-school and school-age children is increasing.

The parental leave benefit also addresses a concern of some child development specialists who believe that the 6–8 week disability period typically allowed to mothers for physical recovery following childbirth is not sufficient for integrating a new child into the family unit. The proposed leave, by definition, would be available to both parents. Since adoptive parents have the same family-bonding needs as biological parents, they also would be eligible for parental leave. Under H.R. 4300, an employee would be entitled to a parental leave of 18 workweeks during any 24-month period. Workers on a reduced leave schedule could take 18 workweeks over a period of 36 consecutive workweeks.

The second leave benefit to be established, a temporary disability or medical leave, would allow all workers who are temporarily disabled for health reasons, including pregnancy, a leave benefit of 26 weeks for use in any one calendar year. This provision is intended to resolve the issue of differential treatment of pregnant workers, who were granted more generous benefits than other temporarily disabled workers under some State statutes. (This practice was recently challenged in Montana and California courts is and currently on appeal to the U.S. Supreme Court.) Before granting medical leave, employers would be allowed to require medical certification and could require, at their own expense, a second medical opinion.

Those who favor the establishment of parental and temporary medical disability leave benefits cite the need to accommodate far-reaching changes in the family and in the workforce. Proponents argue that although some States have provided statutory maternity leave benefits, where these leave benefits do not include the same benefits for all workers disabled for non-occupational medical reasons, such statutes may be challenged as discriminatory. They further note that if courts uphold special protections for maternity, all women may be disadvantaged in the workplace because they may be viewed by employers as potentially more expensive employees.

Opposition to the proposal has come primarily from businesses which note the difficulty of opposing a bill that has been labeled "pro-family" legislation. Nevertheless, they argue that all employee benefits, however socially desirable they may be, are costly for employers who must pass on these expenses to customers.

In addition, they state that guaranteeing the job of an employee on long-term parental or temporary medical disability leave would be more burdensome for small businesses (representing the majority of businesses), with their limited personnel resources, than for large businesses. Those opposed also argue that provision of specific benefits should remain voluntary on the part of employers or be subject to labor-management negotiation, rather than be mandated by the Federal government.

Finally, there is opposition on philosophical grounds to any kind of government involvement in child care or family development due to the belief that such involvement is an unnecessary and undesirable interference in family matters.

H.R. 4300 has been voted out of both the House Education and Labor and the Post Office and civil Service Committees. Proponents hope to schedule it for a vote in the House before the 99th Congress adjourns.

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Technology and Trade:

INDICATORS of U.S. INDUSTRIAL INNOVATION

The pace of U.S. industrial innovation may be declining with negative consequences for U.S. economic growth, productivity improvement, and international trade competitiveness. CRS, at the request of the Joint Economic Committee, prepared a report to assess the state of U.S. innovation in comparison to past domestic performance and current international trends. This study, *Technology and Trade: Indicators of the State of U.S. Industrial Innovation,** found that while there are definite challenges to U.S. technological leadership, there are several trends which indicate changes are being implemented which can improve domestic industrial innovation. The major conclusions are excerpted.

Technological innovation is a process by which industry provides new and improved goods, manufacturing methods, and services. It is a dynamic one involving idea origination, research, development, commercialization, and diffusion of the innovation throughout the economy. The innovation activity is not necessarily linear. A concept can become an innovation without evolving through each step of the process. An invention becomes an innovation when it has been significantly integrated into the economy such that economic growth occurs as the knowledge created is applied to increase productivity or results in a new or improved product that can be sold in the marketplace.

Research has shown that innovation is most successful when tied to the needs or potential of the marketplace. The countries which are challenging the U.S. lead in technological innovation are those in which industries concentrate on the development of technology for civilian markets. In contrast, industries in the United States appear to be falling behind in innovative activity and commercial application in many sectors and in many markets because the emphasis in the more dynamic industries, to date, has been on the development of military and aerospace technologies, largely due to Federal spending in these areas (both for R&D and for procurement).

Decision-making within these industries at the corporate level may thus reflect U.S. Government needs for defense rather than for more commercially-oriented endeavors which are often supported by the governments of our competitors.

Indicators of Innovative Activity

There are currently no direct measures of innovation. Instead, various indicators of the components of innovation activity are used: input indicators measure the amount of resources and effort applied to innovation-related activity and output indicators provide evidence of the results of the innovation process. However, reliance on these indicators does not provide all the information necessary to make accurate assessments of the actual state of innovation. Inputs do not necessarily translate into outputs; sheer numbers of products or processes do not necessarily indicate the presence of innovations.

Yet, despite these and other related caveats, experts have found strong correlations between various factors in the innovation process and increased innovation, leading to economic growth and improved productivity. Thus, while it may not be possible to establish direct cause and effect relationships, the data provide a general framework within which to make a tentative assessment of the condition and nature of U.S. technological innovation and how that contributes to the U.S. ability to compete in international markets.

–DISTRIBUTION OF GOVERNMENT SUPPORT OF R&D BY NATIONAL OBJECTIVE,[1] BY COUNTRY: 1970–83 [2]

Objective	United States				Japan [3]			West Germany				France			United Kingdom			
	1971	1975	1980	1983	1975	1980	1983	1970	1975	1980	1983	1975	1980	1983	1970	1975	1980	1983
Defense and aerospace	75.3	67.5	63.7	.....	19.5	16.8	.....	41.8	29.4	24.4	.....	45.6	49.3	.....	NA	63.2	64.8	.....
Defense	52.2	50.8	47.3	64.3	4.7	4.9	2.4	29.5	19.2	15.3	9.4	32.8	40.1	33.2	72.3	52.8	59.4	50.0
Space	19.6	14.5	14.5	5.5	14.8	12.0	5.8	8.8	7.4	6.6	4.3	6.1	6.8	4.4	3.3	2.5	2.3	1.9
Civil aeronautics	3.6	2.1	1.9	.....	.....	.....	.....	3.5	2.9	2.4	.....	6.8	2.4	.....	NA	7.9	3.1	.....
Agriculture and industry	2.5	2.5	3.0	.....	41.9	37.6	.....	10.9	13.2	15.3	.....	13.1	12.2	.....	NA	8.2	8.3	.....
Agriculture	2.0	2.2	2.7	.....	27.7	25.4	.....	3.5	3.3	2.9	.....	4.2	4.3	.....	4.2	4.8	4.5	.....
Industrial growth	.6	.3	.3	.....	14.2	12.2	.....	7.4	9.9	12.4	.....	8.9	7.9	.....	NA	3.4	3.8	.....
Energy and infrastructure	6.6	10.9	14.2	.....	22.9	34.4	.....	23.4	25.9	30.9	.....	17.6	16.0	.....	16.0	10.3	10.1	.....
Production of energy	3.6	7.2	11.4	6.6	16.0	26.2	12.5	18.8	18.3	20.9	16.9	9.4	8.3	7.1	12.3	7.1	7.3	5.4
Transport, telecomms	1.1	1.2	.9	.....	3.9	2.9	.....	.....	2.5	3.2	.....	3.3	3.0	.....	1.4	.7	.7	.....
Urban and rural planning	.4	.5	.4	.....	1.2	2.3	.....	.8	1.9	5.7	.....	1.6	1.5	.....	1.9	1.8	1.1	.....
Earth and atmosphere	1.5	2.0	1.6	.....	1.8	2.9	.....	2.8	3.1	4.3	.....	3.3	3.3	.....	.5	.8	1.0	.....
Health and welfare	12.2	14.8	15.2	.....	12.1	11.2	.....	8.6	15.9	15.3	.....	6.5	7.5	.....	4.1	4.1	3.9	.....
Environmental p. otection	.9	.9	.8	.....	3.2	3.4	.....	.6	1.7	3.1	.....	.9	1.2	.....	.7	.6	.9	.....
Health	8.7	11.9	12.1	11.5	6.3	6.1	2.6	3.5	5.6	9.3	4.1	4.4	4.9	4.3	2.3	2.3	1.8	1.3
Social development and services	2.6	2.1	2.3	.....	2.5	1.7	.....	4.5	8.5	6.0	.....	1.2	1.4	.....	1.1	1.2	1.2	.....
Advancement of knowledge	3.3	4.3	4.3	.....	3.5	4.1	.....	15.3	15.7	14.2	.....	17.1	15.0	.....	NA	14.1	12.5	.....
Total specified R&D funding	100.0	100.0	100.0	.....	100.0	100.0	.....	100.0	100.0	100.0	.....	100.0	100.0	.....	100.0	100.0	100.0	.....

[1] Excluding general university funds (G.U.F.)
[2] NSF Science Indicators—1982, p. 195, and NSF International Science and Technology Update 1985, p. 8.
[3] Government intramural expenditure only.

The available evidence establishes that the United States is continuing to expand many of the domestic resources involved in innovation-related activities. Public and private sector funds (in constant dollars) dedicated to research and development (R&D) have been increasing in the 1980s. The growth in Federal R&D funding is due primarily to increased defense spending. However, between 1975 and 1986, industrial support for R&D grew at a faster rate than Federal funding and, since 1980, industry has financed more R&D than the public sector.

In addition, industry-university cooperation for innovation-related activities is increasing; in the past 10 years, industrial financing for R&D in the academic sector has more than doubled. Small firms, which tend to be highly innovative, also have increased R&D spending. This has been accompanied by a large growth in the availability of venture capital.

The ratio of total R&D spending to the gross national product (GNP) has grown in the 1980s. Current expansion of Federal funding for defense-related activities has helped to produce this increase. However, the ratio of civilian (non-defense) research and development spending to GNP remains substantially lower than total R&D/GNP and has not displayed similar growth. The number of university degrees awarded and the number of scientists and engineers employed in the United States also increased in the 1980s, but there has been a decline in the number of U.S. patents issued to American citizens.

Internationally, the United States, in most cases, has the highest absolute totals with respect to various innovation related indicators (i.e. R&D funding, scientists and engineers, patents granted, productivity levels). Despite the expansion of many of the domestic resources involved in innovation, the U.S. rates of growth often do not match the growth rates in several Western industrialized nations and the East Asian newly industrializing countries (NICs). In 1984, the United States followed behind Japan, France, West Germany, and the United Kingdom in manufacturing productivity growth. Between 1979 and 1982 Japanese R&D expenditures grew at a rate over twice that of the United States. In addition, the United States is falling behind several other industrialized nations in increases in the number of patents granted, increases in the number of science and engineering degrees awarded, and the U.S. share of worldwide high technology trade.

High Technology Trade

Since 1965, high technology trade has ballasted a growing U.S. trade imbalance, usually recording trade surpluses large enough to offset the growing deficits incurred in lower technology manufactured trade which began in the 1970s. High technology commodities often represent the new frontier of scientific breakthroughs as embodied in commercial products. The United States has had the lead in high technology product development since the end of World War II, and since 1965, high technology has represented a substantial part of U.S. trade. This share of high technology trade is one indicator that the United States has had almost unparalleled success developing innovative products and selling them all over the world.

However, a strong balance of trade need not be synonymous with an innovative industrial base. There have been some nations, notably Japan in the early 1960s, which have successfully adopted existing technology (e.g., electronics and computers), produced it, and sold it at a lower price, essentially replicating the technology without innovating. The United States generally has led in the research, development, and (but not necessarily) the commercialization of many high technology products.

Despite this record of preeminence of U.S. high technology trade, there are indications that this edge is being serious eroded. U.S. high technology surpluses (exports minus imports) have begun to decline markedly in recent years, from a high $26.6 billion surplus in 1981 to $6.0 billion in 1984. In several high technology industries, such as communications equipment and electronic components, the United States posted deficits in 1984.

At the same time that the U.S. high technology market share has been declining, there are indications that many of its competitors are developing a climate of industrial innovation within their own countries. This is true of many of the Western industrialized countries, which have attempted to create their own versions of Silicon Valley or Boston's Route 128. But it is also true of several of the East Asian newly industrialized countries (NICs). These NICs—primarily South Korea, Taiwan, Singapore and Hong Kong—are following the lead of Japan and have attempted to utilize technology developed elsewhere while also creating an educational, scientific, manpower, and technological climate which fosters indigenous technological innovation.

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NUMBER OF SCIENTISTS, ENGINEERS AND TECHNICIANS ENGAGED IN RESERVE AND DEVELOPMENT, FOUR EAST ASIAN NCIs

	SOUTH KOREA		TAIWAN		SINGAPORE		HONG KONG	
	1977	1982	1980	1983	1975	1981	1978	1982
Scientists & Engineers	12,771	28,488	13,656	18,580	635	724	—	—
Technicians	9,315	11,663	13,483	11,313	448	535	—	—
Total	22,086	40,111	27,139	29,893	1,083	1,259	967	—

(Source: United Nations, UNESCO Annual Statistical Abstract, 1978–1979, p. 732734 and UNESCO Annual Statistical Abstract, 1984, p. V–35. For Taiwan, data are from the National Science Council, Republic of China, which follows the OECD definition of categorizing scientists and engineers as "researchers". The Taiwanese government does not include data for years before 1980. The Hong Kong, data are from the Committee for Scientific Coordination, Hong Kong; this committee was disbanded after its last report was issued in 1978.)

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National retirement income policy questions—embracing social security, pensions, personal savings, and tax policy—aroused attention from the current Congress. In the summer of 1985, the House Ways and Means Committee and the Education and Labor Committee both held hearings on national retirement income issues. More recently, the Senate, as part of the Tax Reform Act of 1986, adopted provisions of the Retirement Income Policy Act sponsored by Rep. Clay and Sen. Heinz. These pension amendments would reduce the time needed to earn a nonforfeitable right to a pension, redefine who must be covered by a private pension plan that receives tax-favored status, change the way pension plans can coordinate their benefit formulas with social security, and help assure that amounts set aside for pensions are kept for retirement income, rather than spent before retirement. In addition, the aging of America and the retirement of the baby boom generation move inexorably closer—bringing yet additional questions about the appropriateness of the current programs and policies for meeting the needs of the future.

NATIONAL RETIREMENT INCOME POLICY

As retirement income programs have developed over the years, policy principles towards retirement income security have emerged. Some commissions, organizations, and experts have proposed additional steps, including development of a comprehensive policy to coordinate the various retirement programs and specify overall national retirement income policies. In examining issues of national retirement income policy, many questions need to be considered, including:

(1) What is retirement?
(2) What are the major sources of retirement income?
(3) How can we define adequate retirement income?
(4) What role does Federal tax policy play in retirement income security?

This article discusses these four questions.

What is Retirement?

As elementary as it seems, the first question that arises in examining national retirement income issues is "What exactly is retirement?" To individuals, retirement may mean ceasing work, or working irregularly or part-time. To the sponsor of a pension plan, a participant's retirement may mean only ceasing to work for that employer after becoming eligible for retirement benefits.

The social security program pays full retirement benefits at age 70 regardless of whether a person ceases to work. For individuals under age 70, social security in effect defines full retirement as earning less than a certain amount after attaining the earliest retirement age of 62. Implicitly, this "earnings test" approach suggests that if one earns more than the exempt amount, he or she is not fully retired or, if the earnings are high enough, not retired at all.

The Government has not attempted to adopt a uniform concept of retirement, although it does continue to modify its retirement plans. Both the military and the Civil Service pension plans have recently been changed for newly hired workers. Under both the old and new systems, civil servants with at least 30 years' service receive reduced retirement benefits at age 55. Most public employees may retire at any age with 30 years' service. Many union workers may also retire at any age under "30 and out" provisions. Most private sector workers may retire at age 55, although with reduced benefits. Some companies provide supplements to early pension benefits until social security benefits can begin at age 62.

On the other hand, the retirement age for full benefits under social security, which has always been age 65, will gradually rise to age 67 by the year 2027. Mandatory retirement has been eliminated in the Federal sector. Private sector employees may work until age 70, but their employers do not have to provide pension credit for service past age 65. So while there is a trend towards "early retirement," policies are being developed that encourage, permit, or require people to work longer. In effect, the concept of retirement has been tailored, individually, to fit the specific populations that the programs, tax incentives, or regulatory criteria are designed to serve.

Thus, the concept of retirement is not clear cut. While there may be a general perception that the term means ceasing to work and drawing a pension, prevailing practices and the law provide wide variations of the notion of "retirement."

What are the Sources of Retirement Income?

The popular notion of a "three-legged stool" of retirement income underscores the concept of social security, pensions, and asset income working together to provide retirement income. In addition to these three traditional retirement income sources, many newly retired individuals have added a "fourth leg" to the retirement income stool, namely, earnings from another job.

Looking at new retirees provides a clearer picture of how retirement income programs are working today and how they have changed over the years. Today's retirees commonly possess pension or asset income to supplement social security. Moreover, in the past decade the rate of pension receipt among new social security retired beneficiaries has increased dramatically. Today 56 percent of newly retired married couples and 42 percent of unmarried individuals have pension income. The median monthly income from pensions for married couples was $490 compared to $291 for unmarried individuals. However, social security remains the main retirement income component, accounting for over half of the total income for married couples all the way through about the 45th percentile of the income distribution, and for unmarried men and women it contributes over half through the 60th percentile. On the other hand, pensions account for less than one-fourth of total income for most newly retired couples and unmarried persons,[1] and in 1984 accounted for only 13 percent of the aggregate income of the aged 65 and over.[2]

Eighty-four percent of married couples and 69 percent of unmarried social security beneficiaries reported some income from assets. As would be expected, assets account for an increasingly larger percentage of total income as total income from all sources rises. At the highest income level assets are the major source of income, while at the lowest income levels all sources other than social security contribute a relatively small share of total income. Lastly, about 44 percent of newly retired married couples and 27 percent of unmarried individuals receiving social security benefits also reported income from earnings, thus adding a fourth leg to the metaphorical stool.[3]

How Can We Define Adequate Retirement Income?

How much retirement income is "adequate" is a question subject to conjecture; what income is "desirable" is another.

If one were to define adequate income as that sufficient to keep individuals above the poverty threshold, some might conclude that the retirement income system is performing relatively well. The aged were the poorest age group until 1974, when children displaced them. By 1983 however, the poverty rate of the aged was more than one-third below that for all children. Still, the aged's poverty rate was 12 percent above the rate for nonaged adults.

While "adequate" benefits may allow people to avoid destitution, some feel this criterion itself is wanting. Some regard a "desirable" retirement income as one that allows a degree of comfort rather than one that avoids deprivation. President Carter's Commission on Pension Policy concluded that a desirable goal would be to maintain in retirement the preretirement standard of living.

Social security is designed to help provide "adequate" benefits. Because lower-paid workers are less likely to have savings and be covered by a pension plan, the social security program presumes they have greater need, and therefore, its benefit formula replaces a larger proportion of their preretirement income.

Private pension plans are permitted to coordinate their benefit formulas with social security by essentially picking up where social security leaves off. These plans, which must comply with strict IRS guidelines, are said to be "integrated." A typical plan will reduce or offset the pension earned by a career employee by 50 percent of the worker's social security benefit.

Some charge that social security benefits are inadequate to live on and that companies should not be able to reduce pension benefits by a portion of the social security benefit. Others counter that without integration, lower-income workers may be "over pensioned" while higher-income workers will receive "inadequate" benefits, unless the company contributes more into the plan. Thus, the interrelationship of pensions with social security goes to the heart of retirement income policy—what is adequate retirement income? What should be the role played by each component? What is the desirable retirement income mix?

What Role Does Federal Tax Policy Play in Retirement

Tax Treatment of Pension Contributions and Benefits

Federal income tax policy encourages saving for retirement by providing tax breaks under various qualified pension arrangements. A tax-qualified plan must follow Federal rules aimed at preventing preferential treatment of the high paid. In general, IRS does not tax pension benefits as income until the individual receives them. This typically reduces the individual's tax liability below what it would be if the pension benefits were taxed each year as they accrued.

Qualified pension benefits come from three sources:

(1) employer contributions,

(2) employee contributions, and

(3) earnings on the contributions.

The Federal Government excludes qualified employer contributions from employee income because it is assumed that the employer contribution is not received by the employee until the pension plan actually pays benefits to the employee. Earnings on all contributions are treated in the same manner, i.e., they are not taxed until the employee receives pension benefits.

The treatment of employee contributions, if any, varies. In principle, if none of the contributions and earnings were taxed when earned, the pension benefits are taxed when received. If some of the employee contributions were taxed, only the portion of pension benefits derived from the untaxed contributions and earnings are taxed when received.

Pension Tax Expenditures

Tax expenditures associated with pension plans come from two sources:

(1) when taxes are deferred on accrued pension benefits until employees receive them, the present value of the tax revenue eventually collected is less than if it were collected each year on the contributions and earnings; and

(2) when a retiree receives his pension benefit, he may be in a lower income tax bracket than he was in while working.

The President's FY87 budget estimated tax expenditures for private pensions at $59 billion, social security at $14 billion, and IRAs and Keogh plans at $18 billion.

Tax expenditures on pensions have the goal of promoting additional saving toward retirement. Various reviews of the evidence conclude that the favorable tax treatment of qualified pension plans has increased savings, but by substantially less than a dollar for each dollar of pension contributions.

RITA ANN REIMER

LEGAL ANALYSIS of the PORNOGRAPHY COMMISSION'S JULY 1986 FINAL REPORT

The Attorney General's Commission on Pornography, popularly known as the Meese Commission, was established pursuant to the Federal Advisory Committee Act on February 22, 1985, submitting its final report in July 1986. The commission's objectives as set forth in its mandate were "to determine the nature, extent, and impact on society of pornography in the United States, and to make specific recommendations to the Attorney General concerning more effective ways in which the spread of pornography could be contained, consistent with constitutional guarantees." The Commission was chaired by Henry Hudson, the chief prosecutor of Arlington Co., Virginia, and its ten members were selected with an eye to insuring that diverse backgrounds and different philosophical viewpoints were represented.

Much of the material in the Commission's report is based on medical, psychological, and/or sociological data. No attempt is made here to evaluate this data; rather, this article is concerned with legal aspects of the report and non-legal material is discussed only to the extent that it is relevant to legal issues.

In order to understand the report's legal implications, a brief overview of the constitutional framework under which efforts to regulate pornography are evaluated is required. Although obscenity enjoys no constitutional protection under the first amendment's free speech and free press guarantees, the legal definition of obscenity, established in a 1973 case, *Miller v. California*, is so narrow as to exclude much, if not most, material depicting erotic sexual activity (the usual definition of pornography). Under the three-part *Miller* definition, such material is legally obscene only if

(1) the average person, applying contemporary community standards, would find that the work, taken as a whole, appeals to the prurient interest;

(2) the work depicts or describes, in a patiently offensive way, sexual conduct specifically defined by the applicable law; and

(3) the work, taken as a whole, lacks serious literary, artistic, political, or scientific value. If any component of this definition cannot be met [if, for example, it is not clear "beyond a reasonable doubt" (the standard in criminal prosecutions) that "contemporary community standards" would condemn the challenged material, or that it is "patently offensive"] the material is not legally obscene and thus enjoys constitutional protection.

Minors excepted

The only broad exceptions to this standard involve minors, in that materials depicting minors engaged in sex-

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Critics of the favorable tax treatment of qualified pensions have argued that the distribution of pension tax expenditures by income class is regressive, i.e., higher income individuals benefit proportionately more than low-income persons. This is true for any generally available deferral of taxes on income in a progressive tax schedule because a tax-deferred dollar is more valuable to a person in a high tax bracket than to a person in a low tax bracket. In other words, it reduces a high-income person's taxes proportionately more than a low-income person's taxes because the high-income person faces a higher "marginal tax rate."

Opponents of this view argue that this necessarily follows from the nature of a generally available tax deferral in a progressive income tax schedule. Instead, they argue that the tax expenditure is distributed fairly because it is roughly proportional to taxes paid.

This article has touched on only four basic questions concerning retirement; however, any significant change to national retirement income policy is a formidable task that may require answers to these and many other complicated questions. Congress has signaled its intentions to examine further retirement income policy issues. What, if any, refinements are made to our existing policy, remains for Congress to resolve.

Raymond Schmitt, Richard Hobbie and Geoffrey Kollmann are all specialists in social legislation, Education and Public Welfare Division.

[1]Maxfield, Linda Drazga, and Virginia P. Reno. Distribution of Income Sources of Recent Retirees. Social Security Bulletin, Jan. 1985. (Hereafter cited as Distribution of Income Sources)

[2]Social Security Bulletin, May 1986. p. 7.

[3]Distribution of Income Sources.

ual activity may be regulated regardless of whether they are legally obscene.[2] Also, the government may restrict the provision of pornographic materials to minors even when the materials are not legally obscene.[3]

Another pertinent constitutional standard was established by the Supreme Court in *Brandenburg v. Ohio*,[4] which held that protected speech and press activities which allegedly incite people to unlawful conduct can be proscribed only where the activities are directed towards inciting or producing imminent lawless action, and are likely to incite or produce such action. Any lesser causal relationship has to date been held insufficient to justify government intervention which would interfere with constitutionally protected material.

As background, a predecessor Commission on Obscenity and Pornography was created in 1967 and issued its report in September 1970. That Commission found no evidence linking exposure to pornography with juvenile delinquency or criminal behavior, or that such exposure adversely affects moral attitudes. It also found that a large majority of Americans did not believe in censorship laws, and that the repeal of these laws would not increase the availability of erotic materials. Accordingly, it recommended that all federal, state and local legislation prohibiting the sale of erotica to consenting adults be repealed.

The Final Report of the Attorney General's Commission on Pornography issued in July 1986 differs with its predecessor Commission's report in virtually every aspect, a fact attributed by the 1986 Commission to the massive proliferation of hard-core pornography since that time and its widespread availability throughout the country. The crux of the 1986 report is that exposure to pornographic materials causes harm in a number of ways. While noting that there will never be conclusive proof of a causal relationship, the Commission unanimously concluded that exposure to sexually violent materials bears a causal relationship to anti-social acts of sexual violence as well as to attitudinal changes on the part of those with substantial exposure to violent pornography.

It also found that nonviolent materials depicting degradation, domination, subordination, or humiliation can be linked to sexual aggression. Some members found that nonviolent pornography can have harmful effects as well, although this finding was characterized by Chairman Hudson as the most controversial aspect of the report, and some of the Commissioners stated that they opposed the finding.

In support of these findings, the Commission summarized and evaluated available literature on the subject, as well as testimony presented by a wide range of psychologists, sociologists, and other health care and law enforcement professionals. It also relied on testimony presented by those who said they had been victimized in some way by the production or use of pornographic materials.

All of these findings are controversial, and counterarguments (also discussed in the report) can be offered against them. From the legal perspective, however, even if these findings are accepted as valid, they do not appear to approach the *Brandenburg* incitement standard which must currently be met before constitutionally protected materials can be regulated on this basis. Thus, while they may encourage stronger action against obscene materials, the current state of the law seemingly prohibits their use against constitutionally protected works.

92 Recommendations

The Pornography Commission made 92 recommendations as to changes in laws, enforcement procedures, policies, and funding emphasis which it felt would significantly reduce the problems found to be associated with pornography. Rather than attempting to challenge the *Miller* standard, an action it recognized would be of dubious constitutional validity, it urged the strengthening of present obscenity laws and increased enforcement efforts, since it found obscenity prosecutions to be virtually non-existent in many areas and that legally obscene materials and materials depicting minors engaged in sexual activities (so-called "child pornography") have proliferated even where laws presently exist which could be used against them.

However, a few of the recommendations might present constitutional problems depending on how they are implemented. For example, the Commission recommended that legislatures enact laws defining pornography depicting abuse of women as a form of sex discrimination, although such an ordinance adopted in Indianapolis was recently invalidated on first amendment grounds.[5] Although the Commission recommends that those drafting any such legislation include a definition of "pornography" that will pass constitutional muster, it does not indicate how narrow such a definition would have to be under the present judicial precedents on point.

The Commission also made 14 recommendations as to how citizens can express concern about pornography and other offensive materials in their neighborhoods, including the establishment of community action organizations and advocacy groups. While there is no reason why citizens cannot voluntarily taken any of these actions, their encouragement by a government entity such as the Pornography Commission may be viewed by the courts as impermissible government censorship.

For example, *Bantam Books, Inc. v. Sullivan*,[6] a 1963 Supreme Court decision, authorized an injunction against the Rhode Island Commission to Encourage Morality in Youth from taking certain actions which the Commission argued were nothing more than advising distributors of their legal rights, but the Supreme Court found to be prohibited informal censorship. The Commission had notified distributors that certain books and magazines had been found "objectionable" for sale or display to minors, and police officers later visited the distributors to determine what action had been taken following receipt of the notice.

A federal district court used comparable reasoning in enjoining the Pornography Commission from publishing any listing of distributors of pornography, which listing allegedly was to be based on responses to a letter sent by Alan Sears, the Commission's Executive Director, which informed recipients that they had been cited in testimony before the Commission as distributing pornographic materials and that the Commission would take their failure to deny this as evidence that it was true.[7] Alternatively, they could remove the objectionable—but constitutionally protected—materials from stock. In either event, the court stated, this would impermissibly chill protected first amendment rights.

Not legally binding

The Commission's report is not legally binding, but rather makes recommendations which may or may not be followed by those at whom they are directed. It stresses throughout that it is not intended as the final word on the subject; in fact, two Commission-

RICHARD S. JONES

GAMBLING on INDIAN RESERVATIONS

All across America, from California to New England, something new is happening: gambling operations on Indian reservations are springing up and flourishing.

Most of these are bingo establishments—some offering immense prizes, usually at odds with State regulations governing such activities. A survey conducted by the Bureau of Indian Affairs indicated that at the end of 1985 there were more than 100 such facilities on Federal Indian lands—of these 104 had bingo, 93 had pull tabs or punch cards, 15 had card games, 4 had casino gambling and 15 had other gambling activities. More than a dozen tribes reported gross receipts in excess of $1 million annually, including one with more than $15 million.[1]

There are instances where high stakes Indian bingo games offer prizes of more than $100,000, while some States limit bingo prizes to amounts as small as $100.[2] Moreover, tribes may sign lucrative contracts with management firms specializing in operating gambling enterprises.

The matter is of interest to Congress; seven measures requiring varying degrees of Federal regulation of gambling on Indian lands are now being considered and hearings have been held by both the House Committee on Interior and Insular Affairs and the Senate Select committee on Indian Affairs.

This situation derives from a judicial doctrine of tribal sovereignty that the courts recently have been upholding and elaborating, i.e., that Indian tribes retain a degree of their original sovereignty to the extent that they have not been divested of it by specific Federal statute or by their status subject to the overriding sovereignty of the United States. Since there are no Federal statutes concerning gambling in Indian country (except 15 U.S.C. 1175, pertaining to gambling devices), the issue of whether such tribes retain the right to operate gambling activities has become a matter of judicial determination. Courts have generally held that tribes retain the right to regulate gambling unless statutes that transfer criminal jurisdiction to States or that assert Federal criminal jurisdiction over State offenses committed on Indian reservations apply to gambling. Courts have held, however, that those laws apply only if a State altogether prohibits the gambling activity, not if it merely regulates the activity, as is the case in most States.[3]

At hearings before the House Interior Committee last November an official of the Interior Department elaborated on the reasons for the proliferation of tribal gambling operations:

> The Indian tribal governments see an opportunity for income that can make a substantial improvement in the tribe's conditions. The lack of any State or Federal regulation results in a competitive advantage over gambling regulated by the States. These advantages include no State imposed limits on the size of pots or prizes, no restrictions by the State on days or hours of operations, no costs for licenses or compliance with State requirements, and no State taxes on tribal gambling operations.[4]

While tribes thus tend to see gambling as a source of revenue and increased employment, States object that such activities involve non-Indian customers, are inconsistent with State regulations, and present a variety of law enforcement problems as a result.

A central issue, therefore, is whether Congress needs to establish standards for the regulation of gambling in Indian country.

Concerns about Organized Crime

A particular concern of the Administration and of some Members of Congress is that proliferation of gambling enterprises on Indian reservations may entice infiltration by organized criminal elements. The House Interior Committee found no evidence that this has happened:

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ers indicated when giving their own views (as was done by each Commissioner) that more time and money were needed to do an adequate job of investigating and analyzing pertinent material. By its own account, it would rather be viewed as the framework for further investigations rather than as a finished product. However, until such time as the Supreme Court amends the *Miller* obscenity standard or the *Brandenburg* incitement standard, courts and legislatures are limited as to actions they can take against much pornographic (but non-obscene) material.

On the other hand, there is no reason why obscenity and child pornography laws cannot be strengthened (again within constitutional limits) and/or more strictly enforced against obscenity and child pornography. The Commission's findings that such material is widely available and that relatively few prosecutions occur in this area could spur implementation of their recommendations along these lines.

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[1] 413 U.S. 15, 23 (1973).
[2] *New York v. Ferber*, 458 U.S. 747 (1992).
[3] *Ginsberg v. New York*, 390 U.S. 629 (1968).
[4] 395 U.S. 444, 447 (1969).
[5] *American Booksellers Ass'n v. Hudnut*, 771 F.2d 323 (7th Cir. 1985), *summarily aff'd* 106 S.Ct. 1172 (1986).
[6] 372 U.S. 58 (1963).
[7] *Playboy Enterprises, Inc. v. Meese*, Civil Action No. 86-1346 (D.D.C. July 3, 1986).

For additional information, see Rita Reimer, "Legal Analysis of the Attorney General's Commission on Pornography's Final Report (July 1986)," CRS Rept. 86-148A

> ... On the issue of organized crime, the Committee has not found any conclusive evidence that such infiltration has occurred. The Justice Department, in its testimony on the bill stated that, while it did not claim that Indian gambling operations were presently 'mobbed up,' there was still a potential for such infiltration by organized crime especially after such operations have become successful and have established their credentials and legitimacy.[5]

Secretarial Approval of Contracts

At present there is no requirement for the Secretary of the Interior to approve tribal gambling activities unless such activities involve a contract for the management and operation of such activities (see 25 U.S.C. 81), or unless they necessitate a change in tribal constitutions or bylaws that require secretarial approval of such changes.

In this regard, Interior Assistant Secretary for Indian Affairs Ross Swimmer announced in April of 1986 that revised guidelines for departmental review of tribal bingo management contracts make secretarial review of such contracts under authority of 25 U.S.C. 81 mandatory. (Previous guidelines had established that such review was optional).

Taking Land into Trust

Another aspect of the controversy over Indian gambling involves the taking of land into trust for a tribe by the Secretary of the Interior, if such land is then to be used as the site for a gambling facility. (The Secretary is authorized to take land into trust for an Indian tribe under a variety of statutes; see 25 C.F.R. 151).

On February 16, 1986, the Interior Department announced it would thereafter deny any request to take off-reservation lands into trust status if the land is to be used for the purpose of establishing bingo or other gambling enterprises which do not conform to State and local laws.

Tribes' Reasons for Establishing Gambling

From the tribes' perspective, gambling operations are consistent with the Administration's emphasis on private enterprise and are viewed as a means of earning revenue in the face of budget cuts which were in the offing even before passage of the Gramm-Rudman-Hollings Act in 1985. Moreover, tribes have been encouraged by the trend in judicial rulings which have seemed to uphold the legality of such enterprises.

Legislation Considered by the 99th Congress

Since Congress has plenary power over Indian affairs, Congress can regulate gambling on Indian lands as it sees fit, subject to constitutional strictures. At present there are seven measures pending before the 99th Congress which propose varying Federal standards and authorities governing the regulation of gambling in Indian country.

The two most comprehensive of these measures are H.R. 1920, which has been passed by the House, and is under consideration in the Senate by the Select Committee on Indian Affairs, and S. 2557, which was drafted by the Departments of Justice and Interior and represents the Administration position on the issue. The latter is the more tightly drawn and, from the tribes' point of view, the more restrictive.[6]

Both divide gambling (or "gaming") activities on Indian reservations into three categories: "ceremonial" or "traditional" gambling; bingo; and all other forms of gambling (including, for example, casinos, jai alai, horse and dog racing). The latter two categories would be regulated by different authorities according to varying schemes, while the first, "ceremonial" gambling, is exempted. This is defined as comprising traditional tribal ceremonial gaming not established as tribal economic ventures.

As passed by the House, H.R. 1920 defines bingo to include such related activities as punch boards and pull tabs, while S. 2557 limits this category to bingo alone. Both measures would require regulation of this category by a newly established national commission under complex systems requiring licensing of the gambling operation and accountability of federally recognized tribes that apply to operate such activities.

S. 2557 would place all other gambling activities on Federal Indian reservations under the control of the laws of the State where the tribes are located.

H.R. 1920 would require the regulation by the national commission of all such other gambling operations on In-

BINGO ON AN INDIAN RESERVATION IN CONNECTICUT

Gale Zucker, NYT Pictures

dian lands which existed at the beginning of 1986, under regulations "substantially equivalent" to those of the States where the reservations are located. Otherwise, H.R. 1920 would require a four-year moratorium on all such activities pending a study by the General Accounting Office.

Both bills would require approval by the commission of management contracts, following extensive background checks.

Conclusion

The U.S. Supreme Court has agreed to hear next term a California case where the State was prohibited from regulating Indian gambling, and the matter is likely to be on the congressional agenda for the foreseeable future; for this is an issue that concerns not only tribal sovereignty and economic vitality but also the welfare of the public at large.

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See also Issue Brief 86087, "Gambling on Indian Reservations."

[1]Statement of Marian Blank Horn, Principal Deputy Solicitor of the Department of the Interior, before the Committee on Interior and Insular Affairs on H.R. 1920, the "Indian Gaming Control Act," and H.R. 2402, the "Indian Country Gambling Regulation Act."

[2]Christian Science Monitor, Mar. 25, 1985. p. 1; Washington Post, May 2, 1985. p. A21.

[3]This paragraph was contributed by Maureen Murphy of the American Law Division. For a full legal discussion of this issue see "Gambling on Indian Reservations," by Maureen Murphy, CRS Report no. 85-743 A. April 26, 1985. 24 p.

[4]Marian Blank Horn, Ibid.

[5]House Report 99-488, p. 11.

[6]A third measure, S. 902, requires regulation of gambling on Indian reservations by regional commissions organized by tribes or by the Secretary of the Interior, but does not categorize the activities. H.R. 3752 would require regulation of gambling on Indian lands by a national commission according to the category established by the measure. Three other bills address the problem in specific ways (H.R. 2404; H.R. 3130; H.R. 3745).

Note: Reports and committee prints may be obtained by contacting CRS, at 287-5700. GAO reports may be obtained from the Accounting Office, Distribution Section, Room 1518, 441 G St. N.W., Washington, D.C. 20548, or phone 275-6241; CBO reports from the Office of Intergovernmental Relations, Congressional Budget Office, phone 226-2600; for OTA reports Publishing Office, Office of Technology Assessment, phone 224-8996. Please note that some of the documents referenced are not available for general public distribution.

Small Farms and the Structure of Agriculture

PRESSURES to CHANGE FARM POLICY

Small farms, with annual sales of less than $20,000, are a growing portion of the farm sector but make a decreasing contribution to the production of food and fiber. Small farms include commercial operations, but they also include part-time farmers, hobby farmers, retirees and others who produce limited quantities for a variety of reasons. Because these farmers are a growing portion of all farm operators, proponents of small farms believe that they should receive more public assistance. Others counter that as their contribution to the production of food and fiber declines, their call on public assistance also declines.

JEFFREY ZINN

Introduction

Small farms have received more attention from the media and from agricultural analysts in recent years. As a result of the widely-publicized migration to rural areas in the 1970s, which countered a long and consistent trend, many individuals were added to the ranks of small farm operators.

Also, pressures for redevelopment in suburban areas led to a loss of larger farms and to an increase in very small farms, sometimes referred to as "ranchettes" or "farmettes". Further, new small farm operators were identified with factors that distinguished them from larger commercial operators, including farming as a secondary source of income and benefitting from agricultural tax breaks.

Most Federal farm policies in recent decades have been designed to aid family farms. But today's family farm is unlikely to be a "small farm" as defined here. Family farms now are typically larger and more self-sufficient operations.

Mid-sized family farms dominated agriculture for many decades, but in recent years, their number has been declining rapidly. Today, farming is increasingly characterized by a small number of large farms producing most of the food and fiber, fewer mid-sized farms and a large number of small farms that contribute little to national production. As mid-sized farms become less significant, debate is growing about which policies and programs are most appropriate, given the changing structure of agriculture. Some proponents of change want to see more assistance directed to small farms. An initial problem is to specify who would be aided by a small farm policy.

Defining Small Farms

Small farms can be defined using a number of different statistical measures, including annual sales of farm products, farm size and operator employment patterns. Annual sales, or sales class, is typically used because it is the most consistent available measure. This discussion defines small farms as having annual farm products sales of less than $20,000. (Other analysts have defined small farms as having sales of less than $10,000, $20,000, $40,000 and $100,000 per year in various studies. All are arbitrary cut-offs, yet all can be justified.)

Farms with less than $20,000 in annual sales were about 60 percent of the country's farms identified in the 1982 Census of Agriculture, or about 1.4 million of the 2.4 million U.S. farm units. At the same time, however, these farms received only 6.8 percent of all farm cash receipts.

Small farms are hard to define, in part, because they are operated by a heterogeneous group. Small farm operators include full time subsistance farmers, but they also include retired individuals, part-time farmers, hobby farmers and student-farmers. Full-time subsistance farmers operate a

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declining portion of all small farms, while the part-time, hobby and retired farm groups are all growing in number.

Small farm operators, as a group, have two important characteristics which set them apart from larger farmers. First, many of these individuals are not driven solely by the profit motive. They farm for pleasure, to enjoy a rural lifestyle and for other reasons that are not measured in only economic terms. They undoubtedly don't object to profiting from their agricultural activities, but they are not farming to make a profit. As a group, these farmers are willing to tolerate higher production costs, and to sometimes accept inefficiencies in their operation—conditions that others who depend solely on farming for their livelyhood could not tolerate.

That leads to a second unique characteristic of most small farmers: their primary source of income is employment off the farm. According to 1982 Census of Agriculture data, less than 30 percent of all farmers with sales of less than $20,000 had no off-farm employment while more than 50 percent of these operators worked more than 200 days off the farm. By contrast, 60 percent of the operators earning more than $20,000 annually from sales worked solely on the farm and only 13 percent worked more than 200 days off the farm. One result of off farm employment is that many small farmers have been able to avoid the debt crunch affecting larger farmers.

Small farm operators and their families are important to rural areas. They contribute to the local economy and social fabric in many useful ways. But at the same time, they contribute relatively little to the agricultural sector of the rural economy. Approximately 4.5 million people are estimated to be members of small farm families. Their role in agriculture has been widely publicized, but their role in rural communities has received less attention.

Policy Perspectives on Small Farm Operators

The changing relationship among the number of small, mid-sized and large farms has generated a growing debate about the future direction of farm policy. Recent debate suggests that most people who favor continued Federal assistance to farmers support a farm policy that will continue to assist the remaining mid-sized farms. Beyond that, should farm policy serve the national interest by letting the market place operate, or by aiding large commercial farms where most food and fiber is produced or, at the other end of the spectrum, by aiding the small farms which contribute little to commercial agriculture but do shape the fabric of tl.e rural countryside?

Government policies and programs are often slow to adapt to changing conditions, in part because they disrupt the status quo. One measure of the pace of change can be seen in the goal statements in the omnibus farm legislation, reviewed and modified periodically since the depression, which sets commodity programs and defines overall agricultural policy. Most of the goals of this legislation still reflect the heritage of the depression and the needs of the "family farm". Over the years, these goals have included: increased farm income, reduce income disparity among farmers, stabilize markets, provide an adequate food supply, increase efficiency, cut program costs, seek greater reliance on markets, preserve the family farm, conserve soil, promote exports, stabilize the economy, help the needy, and improve nutrition. Many of these goals may be less appropriate for agriculture as it is structured today. A "shotgun approach"—treating all farms alike—may be inappropriate for serving samll farms, and also may be inappropriate for large farms, some have argued.

One difficulty of redefining agricultural policy to reflect the changing structure is that the governmental support needs of small farmers are very different from those of large farmers. Therefore, a case can be made for thinking in terms of different policies serving different portions of the agricultural structure. Most small farms don't need financial assistance through the commodity programs, it has been argued. These farmers are less likely to grow the crops covered by commodity programs, such as wheat, feed grains, cotton and rice. They do have other regular sources of income.

Instead, small farm operators typically need education and information. This need has been verified through surveys in different parts of the country. Many of the small operators who are new to farming need basic information about skills, techniques and products. Even small farmers who have been operating for a period of time are often not aware of changing techniques or new products.

Relatively few of the small farm operators have an education emphasizing agriculture. They often tolerate inefficiencies because they view it as a second profession or a hobby, and do not know of alternatives. These alternatives might relate to new crops, different machinery, more efficient resource use, or other aspects of farming. Some of these individuals may even be unfamiliar with the Extension Service and other sources of information within the family of USDA agencies.

Several reasons for improving assistance to small farm operators can be identified

First, these individuals do make major positive contributions to rural communities. Without any assistance, a portion of these farmers might be forced to leave farming and the rural communities they support. Many small rural communities are already deteriorating as agriculture becomes concentrated into fewer and larger units, and the local support structure of farm businesses, and community and commercial services for families are no longer needed.

Second, small farm operators are an important political constituency for agriculture. If these operators were excluded from the farm community, only about 1 million individuals would be left, greatly reducing the size of the constituency, and probably its political effectiveness. Small farms are concentrated in States outside the heartland, and are typical of agriculture in many States, especially in the Northeast. Without the interest and support of these farmers, many Representatives and Senators might be less interested in farmer views on agricultural issues. At a time when Federal budget austerity is a high priority, loss of the small farm constituency might damage Federal political attention to the needs of all farmers.

WINTER IN VERMONT

A "SMALL" OR "FAMILY" FARM NEAR WOODSTOCK, VERMONT. THE PEACEFUL SNOWSCENE WAS CAPTURED BY PHOTOGRAPHER MARION POST WOLCOTT, AND IS IN THE FSA COLLECTION AT THE LIBRARY OF CONGRESS.

SMALL FARMS AND THE STRUCTURE OF AGRICULTURE: ADDITIONAL READINGS

As financial shakeout in agriculture continues, Congress has been especially concerned with the effects and costs of Federal agricultural legislation, and analysts have turned their attention to examining the structure of farm communities and identifying farmers most affected by current economic conditions and agricultural policies. The following excerpts consider the position of small farms in the agricultural sector, examining their financial status, their role in rural economies, and their need for government policies and programs.

"Hobby farming and ranching—toiling after work and on weekends for little more than the gritty pleasure of tilling a few acres or raising a handful of cattle—is one of the few bright spots in an otherwise gloomy rural economy."

"Despite complaints of farmers and ranchers, most agricultural economists contend that hobby operators do not send enough produce and animals to market to cause any major impact .... These days, hobbyists are popular with small-town merchants, who say that full-time farmers are too broke to buy more than the bare necessities."

Witkin, Gordon. One bunch of farmers who can still smile. U.S. news and world report, v. 99, Sept. 9, 1985: 68.

"Among the policy issues related to the size and structure of farms are the size of rural populations and incomes; industrial concentrations and monopoly power; the allocation of people or workers among farm and nonfarm occupations and other issues related to costs of mobility; the efficiency of farm production and the cost of farm products; the biases of government policies (mainly designed for other purposes); and the moral or political value of family farms. These issues have varied degrees of relationship to the distributions of various measures of farm size and structure. Some are really matters of land-to-labor ratios; other relate to the demand for and supply of factors of production in agriculture and hence to incomes and mobility. The distribution of farm size, or the "structure of agriculture," has often been a central focus of discussion for those interested in the more basic issues listed.

Even if farm size itself were not a policy issue, the effect of policy on farm structure would be. Policies designed for other purposes may have unintended effects on the competitive position of farms of a certain type. Informed policy judgments require the analysis of indirect and unintended effects of government actions."

Sumner, Daniel A. Farm programs and structural issues. In U.S. agricultural policy: the 1985 farm legislation. Edited by Bruce L. Gardner. Washington, American Enterprise Institute for Public Policy Research, 1985. pp. 238–320. [LRS85–8437]

Third, many small farmers, especially hobby and part timers, are willing to incur higher costs in their operation. This has several benefits. Such farms keep land in agriculture that commercial operators cannot afford to do, often on the urban fringe. They contribute to the local economy through expenditures for agricultural and other services. Whereas small operators tend to utilize local services, thereby supporting the local economy, very large farms often bypass such services, going further to get supplies and services at the best price. Also, small farm operators who are not bound by cost constraints might be more willing to experiment with new crops and techniques, and may serve a leadership role for general agriculture.

The case against improving governmental assistance to small farm operators is that the basic rational for aiding commercial farmers has reduced application here. An adequate supply of affordable food, and the stability of prices and markets are not affected by the actions of small farm operators. Today's major problem, controlling chronic overproduction, is being addressed, in part, by providing farmers with incentives to remove land from production, and to keep land with undesirable environmental qualities out of production. Small farm operations do contribute, in a marginal way, to the overproduction problem.

Summary

Small farm operators, as a group, are not particularly well-served by the current array of Federal farm policies and programs. Their needs are different from commercial operators. Nevertheless, these operators have grown while the traditional mid-sized farm has declined. Thus, there will be increasing debate about whether these operators should be served, and if so, how they bet can be served.

One growing view is that farm policies could be modified so that different programs are available to assist small farm operators, mid-sized farmers, and large commercial farmers. Another possible conclusion is that the most useful policies and programs should come out of other areas of government rather than agriculture.

Most view this decade as a particularly stressful time for agriculture, and look to addressing immediate problems related to farm debt and over-production. It should also be viewed as an opportunity to plan for a new agriculture and a new rural society in the future, one in whicht he role of small farms and their operators is not yet clear.

"A dual farming industry is emerging: a commercial sector with a few larger-than-family farms providing most of the output, and another sector with large numbers of small part-time farms accounting for most farms but relatively little output. The commercial sector on the average realizes favorable rates of return from farming; the noncommercial consumptive farm sector realizes low returns from farming and is economically viable only by supporting the farm operation with off-farm income. The small-farm sector is not inefficient, uneconomic or nonviable in a broad sense because families appear to have alternatives but prefer to subsidize the preferred farm way of life with off-farm income."

"The major causes of farm structural change have been technology, economic growth and off-farm earnings. On the whole, it is not possible to state that federal policies have favored large farms over small farms or are responsible for significant structural change in agriculture. This does not mean that public policies could not be made to favor smaller farms or any other type of farm more than they do."

Tweeten, Luther. Causes and consequences of structural change in the farming industry. Washington, National Planning Association, 1984. 71 p. (FAC report no. 2; NPA report no. 207) [LRS84-0892]

"With few exceptions, small farms, those having less than $100,000 is sales, are not viable economic entities in the mainstream of commercial agriculture—nor can they be made so. However, even a small increase in their farm income could have a significant multiplier effect on the local economy because of the large number of small farms. These farms survive because their operators have substantial outside income (part-time farmers), or because they have found themselves a niche in marketing a unique product with special services attached (often direct to consumers), and/or because they are willing to accept a very low return on resources contributed to the farming operation.

For the small farmers who have substantial outside income or who have found a niche in the market, Government's role would be severely restricted. They are as much able to take care of themselves as owners of large farms.

However, small subsistence farmers who have limited resources, and often limited revealed abilities, represent a genuine problem for which public concern in warranted—these indeed are the rural people left behind. Price and income support programs have done and can do little to solve their problems. These impoverished individuals are a social and economic problem."

U.S. Congress. Office of Technology Assessment. Technology, public policy, and the changing structure of agriculture. Washington, 1986. 374 p. [LRS86-1682]

"The stability offered by part-time farming could be a buffer against further concentration in farmland ownership. In addition, the increased income provided by combining farm and nonfarm jobs affords a way out of poverty for families on many small- and medium-sized farms."

U.S. Dept. of Agriculture. A time to choose: summary report on the structure of agriculture. Washington, 1981. 164 p. [HD 1761.U55 1981]

"The widely held notion that minifarm operators (those with farm sales of less than $2,500 a year) are at the low end of the economic scale and need assistance to upgrade their resource base and farming skills in order to earn adequate income is not supported by the data in this analysis. The perception of widespread poverty among minifarms and small farms has its roots in the statistical separation of the farm and nonfarm sector. Policy analysts, researchers, and others interested in farm sector welfare thus focus on the farming activities of small-scale farm operators, which provide meager returns, and exclude nonfarm activities, which are substantial.

Another widely held premise is that the overriding goal of small (including minifarm) operators is to expand their farming operations to full-time businesses. Nonfarm income-producing activities are considered a means of temporarily supplementing farm income until the farm business is capable of generating sufficient income to support the operator and family. The evidence, however, shows that minifarms and small farms are primarily rural residences for those retired or employed in nonfarm occupations who harvest some hay or graze some cattle to supplement their incomes.

The characteristics of minifarms in this analysis—high total income, negative net farm income, high proportion of operators with nonfarm occupations, extensive farm resource use, and farm assets heavily weighted toward residential rather than production uses—indicate that these operators are interested in rural living, but not necessarily in farming as an income-generating activity."

Brooks, Nora L. Minifarms: farm business or rural residence? Washington, U.S. Dept. of Agriculture, Economic Research Service, 1985. 17 p. (Agriculture information bulletin no. 480)

Rebecca Mazur, environment and natural resources policy bibliographer, Library Services Division

U.S.-Iraqi—from page 4

On May 21, 1984, the State Department specifically condemned "Iranian intransigence" as the main obstacle to an end to the war.

To date, the U.S.-Iraqi relationship appears to have developed as a pragmatic accommodation, brought about largely under special circumstances resulting from political, economic, and psychological exigencies of the prolonged Iran-Iraq conflict. The prospects of an Iranian victory with its potentially adverse consequences for the Gulf Arab states and for U.S. regional interests induced an American "tilt" towards Baghdad. With the official U.S. position of neutrality in the war, the U.S.-Iraqi relationship involves neither military nor financial assistance.[6]

Some observers view the resumption of relations as a significant and symbolic realignment by Iraq away from the radical elements in the Middle East, which have tended to support Iran in the war, and toward closer ties with moderate Arab states, including Egypt, Jordan, and Saudi Arabia. They consider that the move will bolster U.S. objectives in promoting the Arab-Israeli peace process and in gaining support against international terrorism.

Others argue that such realignment has come about by force of circumstances and question the durability of Iraqi ties with the Gulf Arab states. They view the U.S.-Iraqi relationship as little more than a practical accommodation that could come apart as circumstances change.

Issues affecting U.S.-Iraqi Relations

The U.S.-Iraqi relationship is linked to several important issues affecting U.S. strategic, political, and economic interests in the Middle East and the Gulf region. An immediate concern stems from uncertainties over the continuity of that relationship. Where the interests of Washington and Baghdad have coincided, a fruitful development of ties between the two governments has been facilitated. But there exist areas of divergence, stemming in large measure from differing values and perceptions, that contain the potential for eventual erosion. Such issues include the question of political continuity in Iraq where power presently is largely concentrated in the hands of one man, backed by a relatively small power base; Iraq's role in the Arab-Israeli peace process; the problem of international terrorism; and proliferation of the use of chemical weapons.

With the war of attrition continuing on its seemingly unending course, the regime of Saddam Husayn is confronted with difficult economic choices as resources and manpower are expended in the conflict. The capacity of Iraq to prosecute the war currently is being severely curtailed by the fall in international oil prices despite its increasing export capabilities. The population could become increasingly restive because of economic difficulties and growing casualties at the front to the extent of affecting the political stability of the regime, with significant implications for national unity in the face of Iranian onslaughts. On the other hand, the conflict has nurtured a significant degree of Iraqi nationalism.

At present, the Iranian threat of exporting its brand of revolution together with attempts to invade Iraqi territory appear to have muted opposition moves and expressions of discontent within Iraq (with the exception of Iranian-supported Kurdish elements in the north) despite the introduction of austerity programs and decreased development spending. President Husayn has consolidated his leadership through sweeping changes within the ruling Ba'ath Party and the Revolutionary Command Council. The internal security apparatus and coercive control is efficient.

Experience gained and lessons learned from the Iran-Iraq conflict are likely to improve the quality and operations of the Iraqi armed forces. There appears to have been significant modification in the previously inelastic centralization of the military's command and control structure. In the past, because of politicization, the armed forces have suffered certain limitations in capabilities. With the acquisition of large quantities of modern military weapons systems and equipment, difficulties remain in technological assimilation in certain areas and the optimal combat use of sophisticated systems.

The morale factor in the armed forces will continue to be of critical importance in the months to come.

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See also "United States-Iraqi Relations," CRS Report no. 86–142 F, June 30, 1986. For additional information, see "The Iran-Iraq War: Implications for U.S. Policy," IB84016 by Richard M. Preece (periodically updated).

[1]As of 1985, Iraq ranked fourth among Middle Eastern countries in proven oil reserves, amounting to 44.5 billion barrels, according to oil industry statistics. Iraq, as of the close of 1984, claimed proven reserves of 65 billion barrels, with an additional 49 billion barrels of "semi-proven" reserves. When, and if, the latter figure is proven, Iraq's oil reserves would be the second highest in the world after Saudi Arabia. Independent petroleum geologists reportedly generally agree with Iraq's assessment of its oil reserves, and some go so far as to assert that Iraq has the greatest potential for additional discoveries of any country in the Middle East. See U.S. Department of Commerce. Foreign Economic Trends and their Implications for the United States: Iraq. (International marketing Series FET 85–48.) Washington, June 1985. p. 8–9.

[2]Geographically and demographically, Iran retains a natural preeminence in the Gulf region. Iran's size, location, vulnerability, and common border with the Soviet Union give it significance in superpower competition, and the United States has a continuing interest in the maintenance of Iran's territorial integrity, unity, and sovereignty as a strategic buffer between the Soviet Union and the Gulf.

[3]The Administration's move followed Baghdad's withdrawal of support for, and expulsion of, terrorist groups, notably the Abu Nidal faction, and other "positive signals" from Iraq.

[4]August 25 Solarz interview with Saddam Husayn, broadcast by the Iraqi News Agency on january 2, 1983. Foreign Broadcast Information Service (FBIS), Daily Report: Middle East and Africa, Jan. 4, 1983: E8–E9.

[5]Through its official policy of neutrality in the Iran-Iraq conflict, the United States continued to forbid the export by U.S. firms or third-country transfer of U.S. licensed or produced goods on the International Traffic in Arms Regulations (ITAR—"munitions" list) to either combatant.

[6]Iraq is excluded from any funds appropriated for foreign assistance and related programs under sec. 512 of the Continuing Appropriations Act, 1986 (P.L. 99–190) approved on Dec. 19, 1985.

Parental leave—from page 6

MATERNITY AND PARENTAL LEAVE POLICIES: SELECTED READINGS

Of the women currently in the workforce, approximately 80 percent are in their child-bearing years. Unlike other countries, the United States has no national policy on maternity leave. Because of lack of uniformity among companies, some women receive pregnancy-related benefits while others do not. Equally some fathers also may want or need to take leave when a newborn or newly adopted child joins the family. Legislation is now pending in Congress to mandate a national policy of unpaid, job-protected leave for parents of newborn, adopted, or seriously ill children as well as workers with serious health conditions. The following excerpts from recent articles and reports highlight current maternity and parental leave policies in the workplace.

Corporate Guide To Parental Leaves

"Based on the findings and recommendations presented in this report, [this Guide] consolidates all the information needed to design, modify and evaluate parental leave policies so that they produce maximum benefits for individual employers and employees. To assist companies at all stages of policy development, the guide includes: an index of all possible policy components, guidelines for combining components based on an individual employer's objectives, comprehensive information on writing and communicating policy, a complete overview of current Federal and State legislation affecting parental leave policies, detailed options for handling the work of leave-takers, strategies for making the transition back to work most productive, [and] suggestions for developing policies for fathers and adoptive parents. Supplementing the text are numerous examples of actual corporate policies to aid policy planners in determining how to formulate and present policy and in learning how other companies handle parental leaves. To provide insight into employees' experiences, the guide also includes quotes and case examples drawn from Catalyst's nationwide focus groups."

Included in this work is the National Study of Parental Leaves conducted by Catalyst—"a nonprofit organization focusing on career and family options." This study details research findings on parental leave. "Each section reports on the results of a written survey instrument sent to corporations, on focus group discussions with managerial and non-managerial leave-takers across the country and on insights obtained from interviews with human resources policy planners.... Based on conclusions drawn from this research, Catalyst recommends the following policy components: disability leave with full or partial salary reimbursement, additional unpaid parental leave of one to three months, a transition period of part-time work for one month to one year for returning leave-takers, [and] reinstatement to the same or comparable job at all stages of the leave."

Sheinberg, Randy, Annette Rotter, and Maureen Zent. The corporate guide to parental leaves; including Catalyst's report on a national study of parental leaves. New York, Catalyst, 1986. 145, 82 p. LRS86–6673

Maternity Leave: Taking Sex Differences into Account

"Article focuses on structuring the workplace in the context of maternity leave.... [and] considers whether the gender-specific approach incorporated in State maternity leave provisions is a legally valid means to restructure the workplace. Part I presents an overview of current maternity leave policies and dispels the common presumption that maternity leave is "virtually universal." Part II analyzes the two primary solutions to the maternity leave problem suggested by current theories of discrimination, and argues in favor of an approach that takes into account sex differences. Part III discusses the structure of the State maternity leave provisions, and the legal issues raised by those provisions under a sex differences approach. Part IV examines whether the courts have considered those issues in the legal challenges brought to date of the State provisions.... Part V suggests that although the Supreme Court has adopted a differences approach under both constitutional and statutory analysis, it is an approach that is neither clear in theory nor consistent in application. The questions raised by the Court's analysis, and a suggested refinement of its approach, are set forth in the final section."

Dowd, Nancy E. Maternity leave: taking sex differences into account. Fordham law review, v. 54, Apr. 1986: 699–765. LRS86–6042

Maternity Policies and Working Women

"This book is about maternity policies in the United States today, about the rights some working women have and the benefits they receive from their employers when they are pregnant and when they give birth."

The authors "begin by discussing why maternity benefits are important." They then "present a picture of what our current national policy is, and how and why the Federal legislation evolved.... What maternity protection is provided, by what kind of employers, for what kind of employees" is reviewed along "with discussion of what is available at the State level in the five States that mandate benefits." The authors also present their "analysis of the current situation [and] explore the problems that exist and the issues involved in responding to unmet needs." They look at "alternative approaches to the maternity policy issue in the United States and some possible solutions to the problem that have emerged."

Kamerman, Sheila B., Alfred J. Kahn, and Paul Kingston. Maternity policies and working women. New York, Columbia University Press, 1983. 183 p.

Survey of U.S. Companies' Maternity, Paternity and Childcare Policies

"More and more women are working, have to work and want to return to work sooner; employers, legislators and the courts are attempting to respond to these trends in fair, non-discriminatory ways. However, opinion differs widely over just what is fair and what is discriminatory."

Bernard Hodes Advertising, through its publication Personnel Forum, conducted a survey "to discover how U.S. companies are presently handling maternity issues and the corollary subjects of paternity benefits and daycare." Among the surveys' findings were: "half of the companies surveyed paid employees on maternity leave their full salary; ... one-third of all companies had a maternity policy that included some partial salary leave—usually for four months and at the rate of at least one-third of the employees salary; [and] of the five industrial groups highlighted (finance, high tech, non-high tech manufacturing, public domain and healthcare), the healthcare industry had the lowest proportion of maternity programs which included full salary leave."

Survey of U.S. companies' maternity and childcare policies. [New York] Bernard Hodes Advertising [1985?] 12 p., 14 1. LRS85–2667

Work & Family: A Changing Dynamic

"This BNA special report examines the way in which employers, unions, and governments are dealing with the special concerns of working parents. Following are the general conclusions of the report: economic, social, and demographic changes in the last 30 years have resulted in a massive restructuring of the American work force; more employees can be expected to experience difficulties balancing family-and-work concerns; there is no consensus in the United States on the responsibility for helping employees balance work and family; several States have created task forces specifically to address family-and-work problems; parental leave has become a national issue; although there are studies showing that certain family-oriented programs, such as flextime or employee assistance plans, can increase productivity and enhance the corporate bottom line, some corporate officials remain skeptical about whether the potential benefits are worth the actual costs of such programs; in general, corporate America has not kept pace with the changing dynamic of work and family; in the last few years, however, many corporations have become aware of, and have responded to, the increasing interrelationship between work and family; unions are expected to demand that employers strengthen their family-oriented programs; [and] occasionally, as the result of joint labor-management committees or collective bargaining, labor and management have cooperated to implement creative workplace policies that enable employees to handle job and family responsibilities in mutually beneficial ways."

Work & Family: a changing dynamic; a BNA special report. Washington, Bureau of National Affairs, 1986. 366 p. *LRS86–2526*

Work and Family in the United States

"The Economic Policy Council (EPC) launched the family policy panel as part of its world employment project to examine the extent of ongoing changes that are affecting the family, the workplace, and the economy."

"This panel chose to concentrate on five issues that are central to the framework of any family policy: maternity and parental leaves and benefits, child care, maternal and child health care, equal employment opportunity and pay equity, and flexibility in the workplace. The panel arrived at a set of specific policy options. The central recommendations include the following. All women workers should be guaranteed a minimum of a six-to-eight-week job-protected maternity leave, with partial income replacement. All workers should be entitled to an unpaid but job-protected parental leave that enables them to spend time with their newborn or newly adopted children. A concerted effort must be made by all pertinent sectors in our society to ensure the development and delivery of affordable, quality child care services. Preschool programs must become broadly available on a voluntary basis. Equal employment opportunity and pay equity must be sought for women workers through the reduction of occupational segregation and the enforcement of existing equal pay and equal opportunity legislation. The serious lack of maternal and child health care services in the United States should be addressed, and such care should be provided to all women and children through the extension of Medicaid or through private insurance plans. Finally, in order to fully realize the goal of integrating work and family life, a high degree of flexibility must be provided in the workplace. This includes flexibility in attitude, in the scheduling of work hours and leave time, and in the design of employee benefits packages."

Economic Policy Council of UNA-USA. Family Policy Panel. Work and family in the United States: a policy initiative. [New York] United Nations Association of the United States of America, 1985. 69 p.

Marsha Cerny, senior bibliographer, Education and Public Welfare Library Services Division

Dean Shepard, St. Luke's Hospital

St. Luke's Hospital, of Kansas City, Missouri. Watch for an article on the Hospital Insurance Trust Fund in a future CRS REVIEW.

Technology—from page 8

Several of these countries have rapidly growing economies and have claimed large portions of the world high technology market within a relatively short period of time. However, because data about these countries are often incomplete or not comparative, greater research and information collection needs to be undertaken by U.S. institutions if we are to fully understand the East Asian NICs.

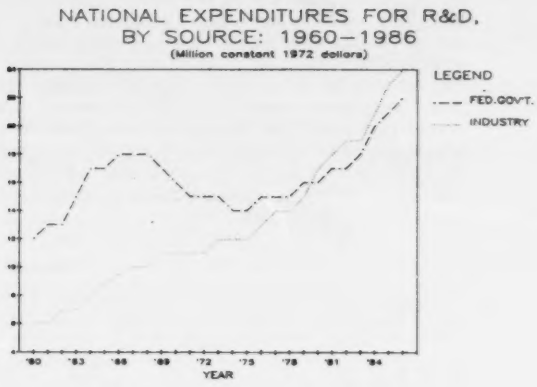
The available data show that in education and training, all four East Asian NICs have made great improvements in the number of students enrolled in the sciences and engineering, with South Korea leading the other three NICs. All four East Asian NICs have increased their overall production of non-referred mathematics, natural science, medical science, and engineering publications. Also, South Korea and Taiwan have made large gains in the number of scientific and technical personnel involved in research and development.

In addition to advances in education and manpower, the four East Asian NICs have developed specific programs and targeted industries for development. Favorable tax policies, creation of industrial parks, and encouragement of joint ventures and cooperatives between domestic and foreign firms are just some of the incentives instituted by the NICs which may encourage development of innovative high technology products and processes. Although hampered by cultural factors such as aversion to risk taking which may impede innovation, the East Asian NICs have begun to develop an infrastructure which may make industrial innovation more likely.

For example, the South Koreans have targeted the semiconductor field for development of new products and processes. Daudek Science Town, an industrial park outside of Daejeon City, when fully completed by 1990, will contain 30 high technology companies.

In Taiwan, the Hsinchu Science-Based Park outside of Taipei, established in 1980, now houses 41 high technology companies, while the Industrial Technology Investment Corporation provides funding, prototype testing and manufacturing facilities for Taiwanese industrial groups.

In Singapore, the National Computer Board has established training centers for software programming and



production. Only Hong Kong has remained outside of the sphere of development of a high technology infrastructure, preferring to rely on exported goods for its high technology trade.

Although the East Asian NICs represent more of a potential than current competitive threat to the United States, their rapid movement in developing programs for industrial innovation will require close attention.

Concluding Observations

Given the increase in technological development in Japan and the East Asian NICs, the United States will face greater competitive pressures in the near future. While this nation continues to increase the resources applied to the domestic innovation endeavor, other countries also are focusing on innovation activities. The apparent failure of the United States to be as successful as some other countries in converting these efforts into technologies and techniques which are competitive in global commercial markets may be explained by the sources of U.S. innovation-related support and their use.

–BUSINESS ENTERPRISE SECTOR DOMESTIC EXPENDITURES ON R&D BY SOURCE OF FUNDS (PERCENTAGES) [1]

	1970	1975	1980	1982
France:				
Business	64	64	70	71
Government	32	28	24	24
Japan:				
Business	99	98	98	98
Government	1	2	2	2
West Germany				
Business	80	79	79	82
Government	18	18	18	17
United Kingdom:				
Business	63	62	.....	[2] 61
Government	32	31	.....	30
United States:				
Business	57	64	68	68
Government	43	36	32	32

[1] OCED Science and Technology Indicators, Basic Statistical Series Gross National Expenditure on R&D, GERD 1969-1982 pp 136-137, 140-141, 174-175, 235-236, and 242-243
[2] 1981

Perhaps the most striking fact of the domestic innovation process is the large amount and proportion of financing supplied by the Federal Government as compared to some other nations. While in this country funding for the R&D enterprise is almost equally divided between Government and industry, in Japan and West Germany the business sectors provide a greater proportion of the total funding than the respective governments. (In the United Kingdom and in France, however, the government funds over half the R&D effort.)

In addition, in 1983 (the latest year data are available for all countries), 64.3 percent of U.S. Federal R&D funding was for defense-oriented activities in contrast to Japan and West Germany where government support for defense R&D was only 2.4 percent and 9.4 percent respectively.

In Japan, 98 percent of funding for industrial activity is generated by industry; in West Germany 82 percent of industrial financing comes from the private sector (1982). In contrast, only 68 percent of U.S. industrial R&D financing is generated by industrial sources (1982), creating opportunities for governmental influences on decisionmaking within the private business sector. As a result of both the large total Federal expenditure for R&D and of the fact that the Government funds approximately one third of the R&D performed in industry, much of the research and development performed within the United States is reflective of Federal needs—particularly defense—rather than those of the civilian marketplace as in several other countries. While there is general support for private sector innovation-related activities in those areas where Government's and industry's interests coincide, there has been less emphasis, to date, on the commercialization of technology and its diffusion in the civilian marketplace.

The governments of the other western industrialized nations studied here also have been involved in R&D; however, this involvement often takes a different approach than the direct funding activities of the U.S Government undertaken without a specific national industrial policy. The United States has recently instituted several efforts to promote technological development in the private sector (including tax credits for R&D and donations of equipment to universities for us in research; promotion of technology transfer; development of a small business innovation program; changes in the antitrust laws to encourage joint research activities; and patent law amendments to foster commercialization).

But the governments of many other countries (including Japan, most of the European nations, South Korea, and Taiwan) have been more supportive of technological development and cooperation among firms in the generation of new products and processes. They also have tended to work cooperatively with industry in the areas of trade, capital formation and investment in R&D.

Research has shown that innovations do not necessarily emerge from technological opportunities but more often from an unmet market need, whether new or existing. Large segments of innovative activity within the United States are not tied to the civilian marketplace, but instead reflect Government priorities and needs. This has resulted in less emphasis on the commercialization of technology for and diffusion of technology in the civilian marketplace.

In addition, several U.S. industries have had a dedicated buyer in the form of the U.S. Government. Other U.S. industries have focused on the large domestic market. Lacking the favorable conditions of both these outlets, the industrial sectors in many of the other nations have had to identify outside possibilities and develop products and processes to meet international marketplace demands. This concentration by other countries, and the lack of worldwide marketing experience by various U.S. firms, has hampered the ability of many American companies to compete on a global scale.

Despite this, there are several trends which indicate that changes are being implemented in the United States. The increased involvement of U.S. industry in funding research and development—and thereby in setting priorities—may help to alter the direction of private sector activities toward more commercially competitive technological development. The closer university-industry ties, which are maturing, have the potential for augmenting opportunities to move research toward commercialization.

Current legislative initiatives for promoting additional cooperative research between industry, academia, and Federal laboratories; for fostering efforts at commercialization of federally-funded R&D by the business sector and by Federal employees; for increasing U.S. access to Japanese scientific and technical literature; and for extending the Small Business Innovation Research program, may provide additional Government-sponsored incentives for private sector activity. However, it is American industry which must decide if it will place increased emphasis on innovation tied to the needs of the domestic and the international marketplaces.

Wendy H. Schacht is a specialist in science and technology; Glenn J. McLoughlin is an analyst in science and technology, both of the Science Policy Research Division.

For further information see IB84004, Industrial Innovation: The Debate Over Government Policy.

**U.S. Congress. Senate. Joint Economic Committee. Technology and Trade: Indicators of U.S. Industrial Innovation. 99th Cong., 2d Sess. Washington, U.S. Govt. Print. Off., 1986. 80 p.*

(See also next page)

—SHARE OF WORLD MAJOR INDUSTRIALIZED COUNTRIES HIGH TECHNOLOGY EXPORTS

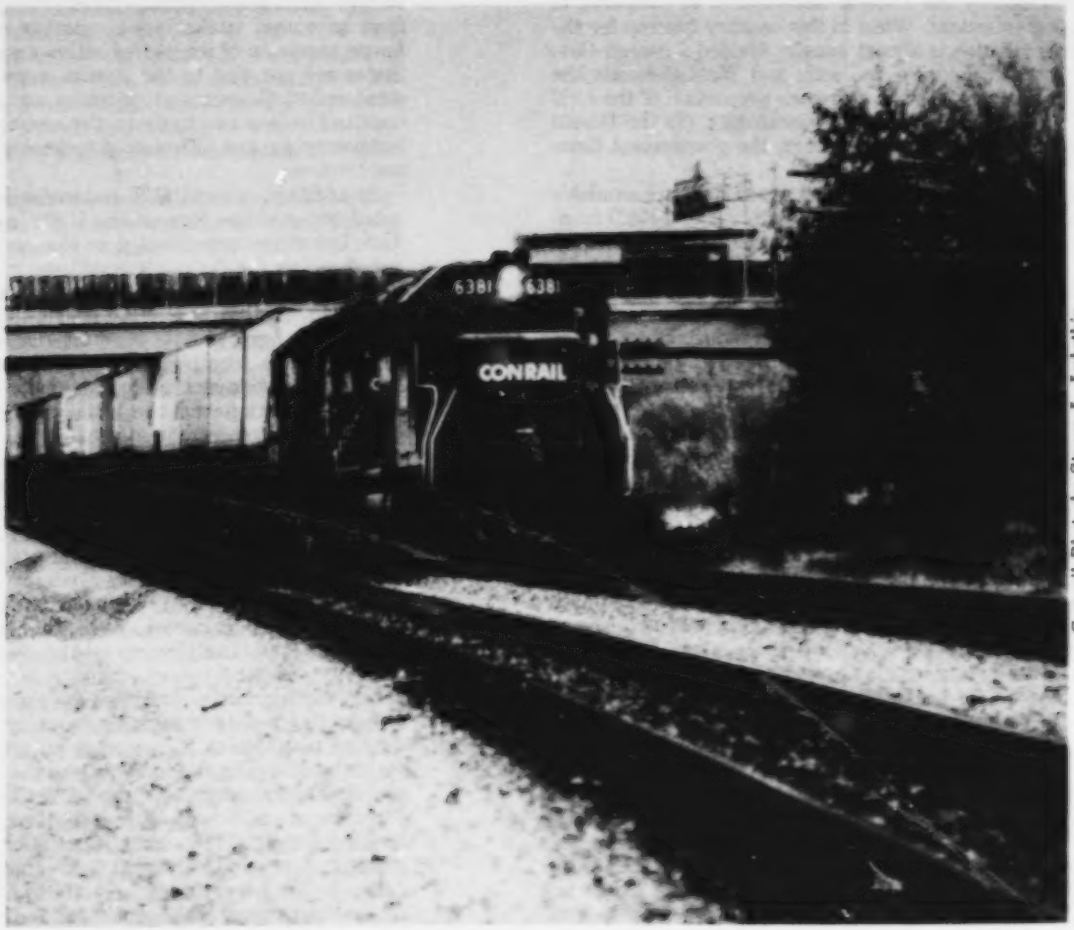
(Percentage)

	1965	1970	1980	1981	1982 [1]
United States	28.4	28.3	24.6	27.2	26.7
Japan	7.2	11.6	15.1	18.2	17.2
Great Britain	12.2	9.9	11.3	9.5	9.8
West Germany	16.4	4.9	16.1	14.6	15.6
France	7.5	7.0	8.3	7.7	7.9

[1] Most recent year data is available

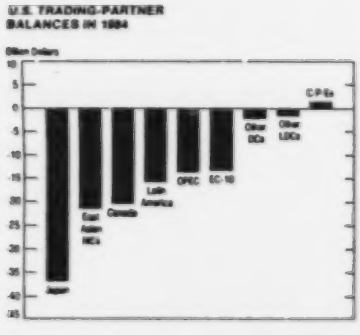
Source: U.S. Department of Commerce, U.S. High Technology Trade and Competitiveness, 1985, p. 45

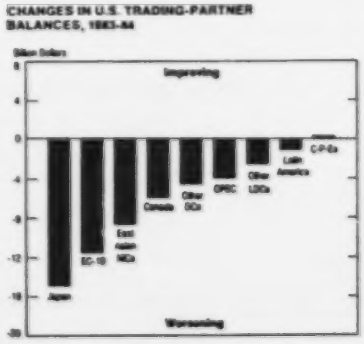
HIGHBALLING?



Conrail Photo by Steven L. Lubetkin

A Conrail piggyback, high-speed train boils along near Utica, New York, on the Albany-Chicago main line. A study on the U.S. rail system will appear in a future issue.





Seminars

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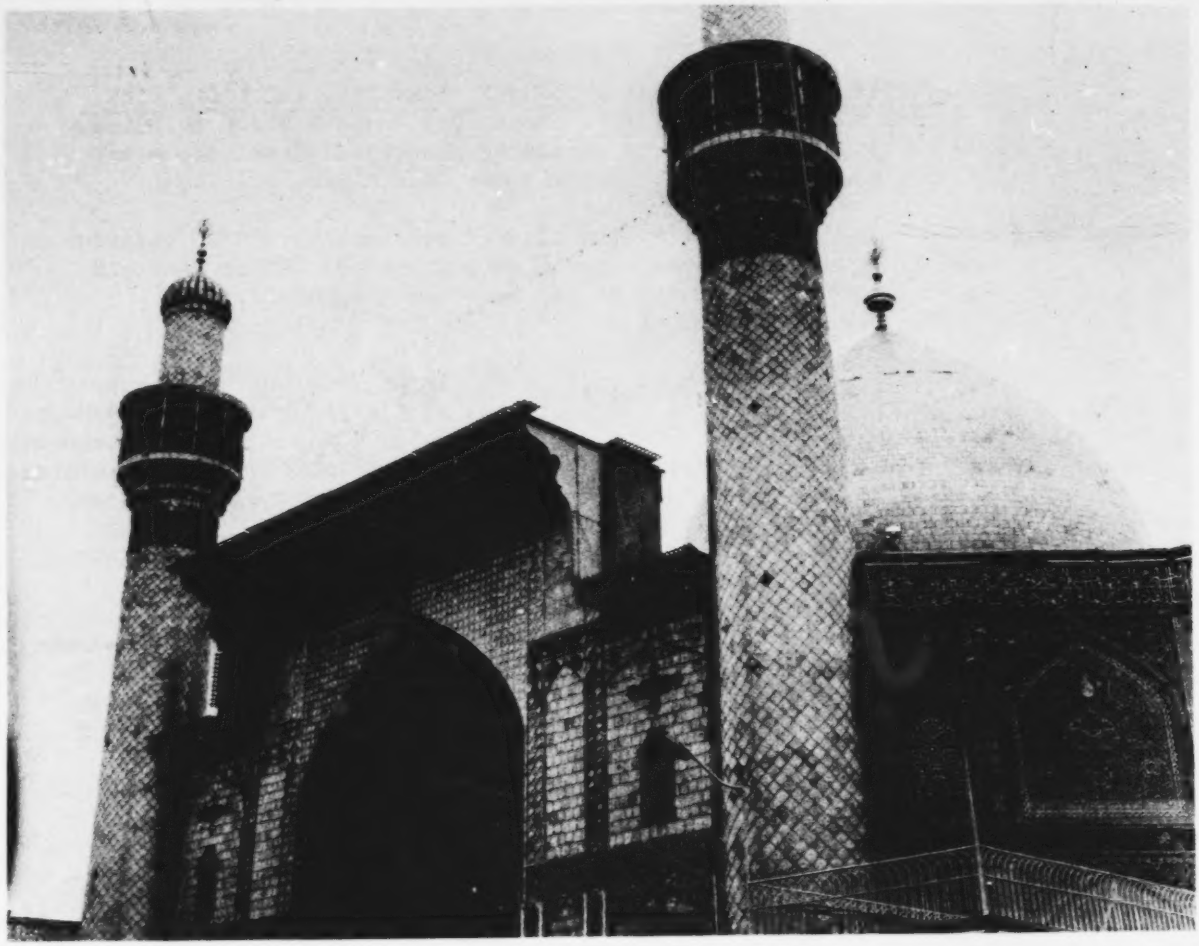
Weekly on Thursday	INTRODUCTORY BRIEFING ON CRS RESOURCES, SERVICES, AND FACILITIES FOR MEMBER AND COMMITTEE STAFF. Room 209, James Madison Building. 10:00 to 11:30 a.m. Open to permanent Member and Committee staff only; not open to interns. Coordinator, Pat Clark, 287-6464.
Weekly	SCORPIO. Introductory training classes available at CRS. Individual refresher or advanced session available at either CRS or your congressional office. Open to Member and Committee staff. Call 287-6447 for an appointment.
October 3, 10, 17, 24, 31, November 7, 14, 21.	BRIEFINGS ON THE TAX REFORM ACT. A series of informal briefings by analysts of the Economics and American Law Divisions of CRS on selected aspects of the Tax Reform Act (now H.R. 3838). Scheduled for successive Friday mornings in October and November, the briefings will be informal, offering opportunities for questions and discussion. James Madison Building, The Library of Congress, 6th floor. Call 287-7904 for location on specific dates. Harry Gourevitch, CRS Senior Specialist in Taxation and Fiscal Policy, Coordinator.
October 8	CRS QUARTERLY ECONOMIC BRIEFING. The third of the Quarterly Economic Outlook Briefings for 1986, which focus on the current status of the expansion, employment, interest rates, the balance of payments, the federal budget, and the prospects for the coming twelve months. A question and discussion period will follow. 9:30 to 11:00 a.m., West Dining Room, 6th floor, James Madison Building, The Library of Congress. Gail Makinen, Coordinator.
October 31	LEGISLATIVE INSTITUTE FOR MEMBER AND COMMITTEE STAFF. A full day program on the legislative process for congressional staffers. Covers committee systems, House and Senate floor procedure, and the budget. Generally a prerequisite for the Advanced Legislative Institute. Open to permanent staff ONLY. James Madison Building. Coordinator, Chad Wilson.
November 20-21	ADVANCED LEGISLATIVE INSTITUTE. A two day program for graduates of the one-day Legislative Institute. Includes sessions on raising measures for consideration on the floor, the amending process, resolving House and Senate differences, the legislative process in operation (examples from the Congressional Record), and committee procedure. Hagerstown, Maryland. Coordinator, Jill Ziegler.



Embassy of the Republic of Iraq

A MOSQUE IN BAGHDAD. SEE UNITED STATES–IRAQI RELATIONS, PAGE 2

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